

# AIR CONDITIONING & REFRIGERATION NEWS

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## '41 Leonards Feature 'Hi-Humid' System, 5-Way Shelf Scheme

7-Model Line Includes Equipped 'Six' Priced At \$124.95

DETROIT—An improved "Hi-Humid" system of controlled humidity and a "Presto Shelf" that makes possible five different storage arrangements top the features of Leonard's seven-model refrigerator line for 1941, introduced to distributors at the recent annual sales convention here.

Price lineup features an equipped 6-foot model at \$124.95, with the base price model at \$114.75, same as the comparable 1940 model. Five "sixes" and two "eights" are in the 1941 Leonard series, with prices of some of the deluxe models as much as \$30 under previous-year models of similar size and features.

Installed prices of new Leonards anywhere east of the Rockies are:

LSS-6 .....	\$114.75
LD-6 .....	124.95
LS-6 .....	139.95
LR-6 .....	154.95
LS-8 .....	179.95
LH-6 .....	179.95
LH-8 .....	209.95

The "Hi-Humid" system has been incorporated in two models, the LH-6 and LH-8, and is distinguished by all-glass shelving and a glass-enclosed "Hi-Humid Freshener" compartment, separated from the storage compartment above by a glass partition. Two metal-trimmed glass doors provide access to this section, and keep outside air from entering this compartment when the refrigerator door is opened.

Three zones of humidity are provided.

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## McCray Co. Makes Changes In Its Staff

KENDALLVILLE, Ind.—J. W. Hart has been elected treasurer of McCray Refrigerator Co. to fill the vacancy caused by the recent death of R. E. Davis. Mr. Hart had been vice president and secretary of the company for the past several years, as well as office manager. He will continue as vice president and office manager.

Mr. Hart, who has been a member of the McCray organization during

## Atherton Joins Trane Executive Staff

LA CROSSE, Wis.—George R. Atherton has been appointed for executive sales work with Trane Co., according to a recent announcement by the company. Mr. Atherton, who was formerly associated with American Radiator Co., will work with the 85 Trane branches throughout the country.

Mr. Atherton's appointment to the Trane organization is part of the company's current expansion program to meet the needs of industry and residential building, officials reported.

## November Refrigerator Tax Down 25%

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators totaled \$302,618.83 during November, according to statistics released by the office of the Collector of Internal Revenue. This compares with a total of \$400,205.55 in the same month of last year.

## More 'Unit' Lines Will Be Exhibited At Industry Show

CHICAGO—"The most comprehensive array of products for use in or application to refrigeration and air conditioning purposes ever assembled under one roof at any one time," will be on display at the Third All-Industry Refrigeration and Air Conditioning Exhibition Jan. 13-16 in the Stevens hotel here, asserted M. W. Knight, general sales manager of Peerless of America, Inc., and chairman of the exhibition committee last week.

Mr. Knight made his statement after an inspection of the descriptions of merchandise furnished by the exhibitor companies.

"After looking over these lists," said Mr. Knight, "it is more evident than ever that the All-Industry Exhibition is truly becoming the annual Refrigeration and Air Conditioning Mart which its sponsors set out five years ago to make it."

"Beginning as a trade show for the display of refrigeration parts, materials, supplies, and accessories it was broadened before it opened its first show in January, 1939, to include

(Concluded on Page 16, Column 3)

## Special ASRE Meeting Scheduled At Show

NEW YORK CITY—Both refrigeration sales executives and refrigeration engineers are invited to the First National Conference on Refrigeration Selling, Jan. 14 at the Stevens hotel in Chicago, sponsored by the American Society of Refrigerating Engineers, according to David L. Fiske, secretary of the society.

Staged in conjunction with the All-Industry Exhibition, the Conference on Refrigeration Selling will be called to order at 2:30 p.m.

(Concluded on Page 16, Column 5)

## Industrial Sales Boom Detroit Air Cooling

DETROIT—Air conditioning sales in the Detroit area for the first 11 months of 1940 exceeded the volume reported for the same period in previous years by a wide margin, according to S. S. Sanford of the Detroit Edison Co. Total for the period amounted to 11,951 connected horsepower, as against 3,603 hp. reported for the same period of 1939.

Large industrial comfort cooling and process installations totaling 7,905 tons swelled the 1940 total.

(Concluded on Page 12, Column 4)

## Washington, D. C. Office Opened By Crosley

WASHINGTON, D. C.—To handle more efficiently its business with the federal government, Crosley Corp. has opened a Washington office in the Munsey building. Quinton Adams, who managed the Crosley building and exhibit at the New York World's Fair, has been placed in charge of the new office.

Mr. Adams has had wide experience in the radio and appliance field. He came to the Crosley organization from the National Broadcasting Co.

## York's Profits For Year \$483,122

YORK, Pa.—York Ice Machinery Corp. for the fiscal year ending Sept. 30, 1940, shows a gain of 7.5% in sales, an increase of 20.6% in unbilled orders on hand, and net earnings of \$483,122 after taxes, contrasted with a loss of \$185,077 the year before.

In the company's letter to stockholders higher volume and better control over costs are credited for the improvement in profits which contributed to a stronger position in both cash and net current assets. With sales of \$16,163,895 only \$1,133,617 greater than in the preceding year, net earnings before income taxes showed an improvement of \$782,682. Yorking capital increased by \$566,792 and the company closed its year with a larger cash balance on hand than at any year-end during the past decade.

(Concluded on Page 16, Column 2)

## 'Reverse' Cycle Used In New Mobilaire

NEW YORK CITY—"Reversed cycle" heating is incorporated as a feature of one 1941 model Westinghouse Mobilaire window-type room cooler, which is slightly larger than a table model radio, and has a ½-ton cooling capacity.

In summer the unit operates in the same manner as a conventional room cooler, but when heat is required, the refrigerant flow can be reversed, thus absorbing heat from the outside air and releasing it in the room.

According to P. Y. Danley, air conditioning and commercial refrigeration manager for Westinghouse, the new air conditioner supplies several times as many heat units for every unit of power as the ordinary electric heater, and its operating cost is correspondingly low.

Explaining the operation of the new unit, Mr. Danley said: "In

(Concluded on Page 15, Column 1)

## Colored Interiors, Colonial Styling Mark '41 Westinghouse Models

G-E's Bottom Price \$114.95; Next \$145

NEW YORK CITY—Suggested list prices for 1941 General Electric refrigerators, which were announced last week by H. L. Andrews, vice president in charge of the G-E appliance and merchandise department, begin at \$114.95 for the special 6-cu. ft. model.

This price is suggested by the manufacturer for use in the "zone two," comprising most of the country with the exception of the extremely western and southern markets, and except for zone one, where the price is slightly lower.

Of the three "sixes" in the G-E line for 1941, the Standard is priced at \$144.95, and the "Royal" at \$164.95. Porcelain exterior models are somewhat higher, in all sizes.

Of the two newly designed "sevens," the "Imperial" has a recommended list price of \$184.95, and the "Deluxe" of \$209.95.

The "Standard Eight" is priced at \$174.95, and the "Deluxe Eight" at \$229.95. There are also "twelves," "sixteens," "threes," and "fours" in the line. The above prices include the cost of the four-year replacement contract on the hermetically sealed units.

## Philco Convention Will Open Jan. 6 In Chicago

CHICAGO—Mid-winter convention of Philco Corp. has been set for Jan. 6 to 8 at the Edgewater Beach hotel here. More than 800 Philco distributors, plant executives, and field representatives are expected to attend the three-day meeting, at which new refrigerator models for 1941 will be introduced.

## To Be Featured At All-Industry Show



A packaged unit which brings air conditioning to auto trailer coaches will be shown in operation by Carrier Corp. at the Third All-Industry Refrigeration and Air Conditioning Exposition at the Stevens hotel, Chicago, Jan. 13-16. Left to right are

H. G. Strong, Carrier branch manager, Chicago; Mark E. Mooney, Carrier branch dealer manager; and M. W. Knight, chairman of the exhibition committee. The girls, who will usher at the exhibition, are Ann Howard and Patricia Stewart.

Prices Start At \$119.95; Informative Labeling Program Launched

NEW YORK CITY—Styling in a Colonial mode and the use of interior colors for the first time distinguishes the 1941 line of Westinghouse electric refrigerators, introduced here last week at a special preview.

In addition to apartment house models of 3 and 4-cu. ft. size, there are 12 models in the 1941 Westinghouse line, sized in storage capacities of 6, 7, and 9 cu. ft. The 5-foot model of former years has been eliminated from the line, and 7 and 9-foot units added.

Prices of the 1941 models follow a step-up pattern, with the "special" 6-foot unit carrying a New York zone price of \$119.95. This price, however, is subject to change. Direct comparisons of other prices with 1940 models is difficult, because of the realignment of sizes, but in general appear to be at least as low as last year for models of similar capacity and features. New York zone prices follow:

Special Series	
AS-6 .....	\$119.95*
S-6 .....	129.95
"Betsy Ross" Series	
B-6 .....	144.95
BP-6 .....	159.95
B-9 .....	179.95
"Dolly Madison" Series	
D-7 .....	179.95
DP-7 .....	209.95
"Martha Washington" Series	
M-7 .....	199.95
M-9 .....	229.95
MP-9 .....	245.95
"Humichest" Series	
H-6 .....	169.95
H-6 .....	209.95

\*Subject to change.

Other highlights of the Westinghouse major appliance program for 1941 include a fully automatic washing machine, the Laundromat; a new

(Concluded on Page 4, Column 1)

## Virginia Sales Showed Increase In November

ALEXANDRIA, Va.—Major appliance sales by dealers in the territory of Virginia Public Service Co. showed increases all along the line both for the month of November and for the first 11 months of the year.

November refrigerator sales totaled 485 units, compared with 409 during the same month last year. Range sales for November were 174 against 103 for November, 1939, while water heater sales were 32 compared to 27 for the corresponding month of the previous year.

For the 11-month period refrigerator sales were 12,745 compared to 8,358 for last year, range sales were 1,667 against 1,085, and water heater sales were 549 against 408.

## Westinghouse Appoints Freeland To Sales Post

MANSFIELD, Ohio—Vale E. Freeland has been appointed supervisor of department and furniture store sales for Westinghouse Electric & Mfg. Co.'s merchandising division, it is announced by Frank R. Kohnstamm, sales manager.

Mr. Freeland joined the Westinghouse organization 15 years ago, and since 1935 has been major accounts supervisor for the central district. His headquarters will be at merchandising division offices here. He will be in charge of the Westinghouse exhibit at the housewares and appliance market in Chicago during January.



## Distributor-Dealer Doings

One Idea---Effectively Put Across



"Chalk off Blue Monday with a Bendix" was the theme carried out in this display window, which won a \$100 prize for C. F. Ellis, McCurdy's department store, Rochester, N. Y.

### Richmond Appliance Club Appoints '41 Committees

RICHMOND, Va.—Appointment of new committee members in charge of activities of the Electrical, Radio & Refrigeration Club, Inc., have been announced here by T. E. Johnson, new president, as follows: entertainment, Max Schutze, C. J. Arnold, and A. C. Burke; grievance, J. H. Hartman, A. J. Daffron, and D. D. Eanes; membership and attendance, Harry G. Duval, R. S. Montgomery, and D. A. Tomlinson; publicity, Joseph A. Heeke, E. S. Whitlock, and W. Filer.

Melvin G. Whittle is vice president of the club and Robin Frayser is secretary-treasurer. Members of the board of directors include H. M. Parker, A. A. Hawks, E. W. Bugg, J. A. Black, and George Moore.

### N. Hampshire Auto Supply Firm Handles Crosley

MANCHESTER, N. H.—A new electric refrigerator department featuring the Crosley Shelvador has been opened by the local unit of Gofkauf's, large automotive supply chain.

Full-page advertisements in local newspapers heralded a three-day sale to mark the opening, and during that period the management offered a limited number of refrigerators at one half the usual price.

### Rochester Store Had Best Bendix Window

ROCHESTER, N. Y.—C. F. Ellis, a member of the staff of Carl F. Skaer, publicity director of McCurdy's department store here, won the \$100 first prize offered by Bendix Appliance Corp. for the best window display of Bendix washers, in a national contest.

B. M. Hanley is manager of the store's appliance department which handles Frigidaire refrigerators and Tappan ranges, in addition to the Bendix line.

Mr. Hanley states that the company has had an "excellent year" on household refrigeration, having marketed nearly 200 boxes in 1940.

### Knoxville Unit Price Drops in November

KNOXVILLE, Tenn. — Knoxville electrical appliance dealers during November sold 168 household refrigerators at an average price of \$136 for a total dollar volume of \$22,865, according to reports of Knoxville Electric Power & Water Board.

Range sales totaled 217 units, while only 46 water heaters were sold during the month.

Appliance	Unit Volume	Average Price	Dollar Volume
Refrigerators	168	\$136	\$22,865
Ranges	217	132	28,608
Water Heaters	46	74	3,401
Commercial Boxes	16	429	6,860

## Selling 'Through the Dealer' Rather Than 'To the Dealer'

The Function of the Wholesale Salesman

H. M. Butzloff, author of this series of articles, is central sales manager for Norge. Before that he had many years of experience in the field distribution end of the household electric refrigeration business, with Westinghouse, and with the old Stover Co., original Frigidaire distributor in the Chicago area.



With the introduction of new lines of household refrigerators and other major appliances, the wholesale or distributor's salesman begins a new year. This series of articles, by a man well-known in appliance sales work, is aimed to give the wholesale salesman some pointers on how to do a better job.

By H. M. Butzloff

### Selling Ideas, Not Merchandise

#### BE A GOOD CLOSER

Loose conversation does not make you any money. Broadcasting ideas hither and yon without being executive enough to put them into action is indicative of poor closing ability.

There is no open sesame to closing. You must ask for a buying decision. The process of closing which has most appealed to me during a decade of selling is simple:

Step No. 1. You ask for the order.  
Step No. 2. The customer says "No."

Step No. 3. You say "WHY?"  
Step No. 4. The customer gives you an objection.

Step No. 5. You answer the objection and start over again at Step No. 1 and ask for the order.

If the customer still says "NO" you keep up the process of going through Steps Nos. 1, 2, 3, 4, and 5 until either the prospect finally says "YES" or you are convinced that the prospect can give you more objections than you can answer.

The job of being a good wholesale salesman is a big one, even a tough one. It takes a good man to climb out of the peddler class in being a real sales counselor to a dealer. But the minute that he sells through the dealer and not to the dealer his commission check starts to rise.

A story that has been helpful to me through the years may be worthy of repetition.

It is supposed to have happened in Chicago, where a large dynamo in one of the principal lighting stations suddenly stopped, to the tune of a \$25,000 loss per day to the company.

The dynamo tender rushed up to determine the cause, remedy it, and start it going again. After a thorough examination he decided that it had stopped for no apparent reason—but it had stopped nevertheless.

The superintendent of the station took a hand but he too was stumped for either an explanation or a suggestion that would get it going again. Therefore, to his utter dismay, they had to summon the chief engineer. The chief gave one look at it—then another, and still a few more, but all failed to reveal the trouble.

A conference with the president of the company resulted in a wire to New York summoning an expert.

The expert arrived. He, too, gave one look, then he tapped a certain part that produced a loose noise. He tightened a small nut and said, "Start 'er up." The huge machine proceeded to run again and even better than ever.

In due course the New York mail contained a bill for \$5,000.00. The president raved and tore his hair. He demanded an itemized bill. He got it. It read as follows:

For tapping and tightening one nut .....\$ .50  
Knowing where to tap .... 4,999.50  
Please remit .....\$5,000.00

With that as a text you can almost

o. Coupons from national and local advertising.

(2) The actual laying out and suggestion of a plan or plans for getting prospects which will fit the needs of the dealer.

In order to make and develop your business while you are away from the dealer, you can easily get him to find prospects for himself. If he is a new dealer you can insist on his getting prospects before you go out with him and close some of them for him.

Taking the above list of sources of prospects as a starter, there are hundreds of ways in which you can develop plans to get still more prospects.

The user reward plan has proved the most successful of all prospect-getting plans in the major appliance field. Yet many dealers do not employ it because it has not been sold to them by an IDEA-MAN.

Having a service man in his off seasons make a call on old users, cleaning condensers, oiling motors, and making a very general check-up, without charge, has proved quite successful in developing prospects for many dealers, as well as in maintaining goodwill.

Ideally, you can develop a lot of prospects quickly and effectively by means of cooking schools, small store demonstrations, meat marketing schools. Mass development of prospects is to be encouraged because names and addresses can be easily obtained and often a qualification can be had so that time can be conserved; but best of all, it gives the salesman the name of a prospect who can be called on without making a cold canvass call.

#### IDEAS IN RECORDS SETUP

(3) A most important consideration in the development of prospects for the dealer is some systematic record of the calls made, dates to be followed up, and status of the call.

An IDEA-MAN will suggest and help install a simple prospect recording system, consisting of a neat box to hold the cards, as well as providing cards where a complete record of each prospect is kept.

If you encourage a dealer to keep an orderly record, with notations as to the kind of buyer the prospect is, his needs, the condition of his present equipment, together with a simple system of followup appointments and an orderly method of filing, you will go a long way in developing a successful dealer and selling yourself and your product to him.

### Houston Refrigerator Sales Up In October

HOUSTON, Tex.—The 952 household refrigerators sold during October in the territory of Houston Lighting & Power Co. accounted for a dollar volume of \$142,800, according to a report compiled by the utility.

Seven hundred and eighty-three of these sales were made in the city of Houston itself, compared to 639 Houston sales in October, 1939. In all other appliances, too, Houston accounted for by far the greater part of the territory's sales total.

Other municipalities included in the Houston territory are Galveston, Goose Creek, Rosenberg, Wharton, Freeport, Humble, and La Porte. A summary of October appliance sales in this area follows:

Appliance	Unit Sales	Dollar Volume
Refrigerators	952	\$142,800
Ranges	3	300
Water Heaters	10	680
Radios	3,386	101,350
Washers	861	51,660
Ironers	42	4,200
Vacuum Cleaners	302	18,120
Attic Ventilators	66	6,600
Milk Cooler	1	400

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## When Norge Distributors Got Their 1941 Plans



Compton-Knodel Distributing Co., Cincinnati, was well represented. Standing (left to right) are: James T. Hardy of Compton-Knodel; Paul Puffer, Norge sales manager; and the distributorship's two "head men," Elmer Compton and Harry Knodel. Seated at the table are (left to right): O. R. Wheeler, S. J. Moutner, James Mefford, Gordon Lee Morson, and L. J. Reker, all of Compton-Knodel.



P. A. Seaton (left) and W. E. Seaton (right) of Benjamin T. Crump Co., Richmond, Va., engaged in spirited discussion with M. G. O'Harra, Norge vice president in charge of sales.

## Crosley Makes Kitchens For Field Operations Of the U. S. Army

CINCINNATI — Mess-call will mean more than merely so much martial music when the U. S. Army starts to get the thousands of army field kitchens on which construction will be commenced by Crosley Corp. shortly after Jan. 1 under a \$775,000 government order.

The 10,500 field range cabinets, included in the order, will be chiefly of aluminum and duralumin and will be built in Crosley's Richmond, Ind. plant, while 12,000 gasoline fire units will be manufactured in the Crosley plant in Cincinnati.

Deliveries on this War Department contract for the quartermaster corps are scheduled to begin before March 19 and must be completed by June 30, necessitating an average production of about 3,000 units a month.

Recently, the government awarded to Crosley a special development order for radio equipment and a quantity of radio receivers and other equipment for the signal corps and coast guard.

## New Dealership Opens In Manitowoc, Wis.

MANITOWOC, Wis.—Ed Chloupek and Ramon Thomas, both formerly associated with the W. C. Talmadge Co., have opened a new electrical appliance store here at 911 Washington St. with a complete line of Frigidaire refrigerators and ranges.

## Nebraska Dealers Back Rose Bowl Candidate In Promotion Stunts

LINCOLN, Neb.—The enthusiasm that followed the selection of the University of Nebraska Cornhuskers as eastern representative in the Rose Bowl game at Pasadena, Calif. on New Year's Day has been used to good advantage by local appliance dealers in their current advertising and promotion.

Iowa-Nebraska Power Co. tied-in the Rose Bowl bid with an advertisement on ranges, in which congratulations were offered to "Nebraska's All-American Team." Readers were urged to see both range and football team in action "to appreciate what precision, perfection, and streamlined performance really means."

At Omaha, the Paramount Home Appliance Show reported increased sales from a contest in which four sets of Rose Bowl all-expense trips were awarded. Competition was open to all purchasers of an appliance worth \$10 or more, with contestants required to submit a 25-word statement telling why they liked this appliance best.

## Bentley Bros. Moves In Augusta, Ga.

AUGUSTA, Ga. — Bentley Bros. Furniture & Electric Co. has moved into a new location at 724 Broad St. here, remodeled to provide special display for electrical appliances. Newt Bentley is manager of the firm.

## McBrien New Manager Of Electromotive Corp.

DALLAS, Tex.—R. J. McBrien has been named manager of Electromotive Corp., Dallas air conditioning and refrigeration supplies jobber. He succeeds J. R. Sparkman, who recently resigned.

Mr. McBrien for the past five years has been auditor for the company. In another executive change, O. D. Sparkman, formerly warehouse manager, has been appointed buyer and assistant manager in charge of operations. No changes were made in the sales staff of the company.

## Edgar Morris To Handle More Westinghouse Major Appliance Lines

WASHINGTON, D. C.—Edgar Morris Sales Co., for several years distributor of Westinghouse refrigerators in this territory, on Jan. 1 also will assume distribution of all Westinghouse major appliances, including electric ranges, washers, water heaters, vacuum cleaners, etc.

The Washington branch of Westinghouse Electric Supply Co., which formerly handled all major appliances except refrigerators, will continue to distribute radios and small appliances. Horace Wolf of the appliance division of the Wesco Washington branch, will be transferred to the Norfolk, Va. territory as field man on refrigerators and major appliances.

## Hidden Operator Makes Real Conversationalists Out of 'Talking Appliances' In Display Home

WEBSTER GROVES, Mo.—"Talking" appliances, familiar figures in the model kitchen demonstration field, had another big inning during the recent month-long showing here of the model home of David Harrington of Frigidaire's St. Louis office. Mr. Harrington's residence was included in the model home series sponsored by Life Magazine.

The 8-cu. ft. refrigerator and the electric range in the Harrington kitchen both were literally "wired for sound." A loud speaker was concealed in each appliance, and wires of a public address system led to a concealed announcer in a nearby house. A switch made it

possible for the announcer to speak to visitors in the Harrington kitchen through either appliance.

Watching the display kitchen from a convenient window of the house in which he was located, the announcer could thus make both the refrigerator and the range "speak for themselves" whenever any woman stopped to look them over.

In this way any woman opening the door of the refrigerator or of the range oven was invited, seemingly by the appliance itself, to twiddle the dials, take out and examine interior fittings, and in general to give the appliance in question a careful "once-over."

## 'Bad Jobs' Holding Back Hartford Air Conditioning, Supply Jobber Declares

HARTFORD, Conn.—Dissatisfaction with existing air conditioning systems on the part of the public has brought the industry to a standstill here this year, according to Edward C. Marsden of Marsden & Wasserman, supply jobber here.

Mr. Marsden reports that no theaters have been equipped with cooling systems, with the exception of one "washed air" job that does not include refrigeration. One large department store has a complete air conditioning system of the latest design, but Mr. Marsden asserts that the reaction of the public to this system has been unfavorable.

Questioned concerning what made "bad" air conditioning installations, Mr. Marsden stated that in his opinion the average system kept the occupied space too cold and did not have proper control.

Mr. Marsden reported, however, that his firm's business was "running way ahead of last year" and that commercial refrigeration was going "great guns."

## Charleston, W. Va. League Names New Officers

CHARLESTON, W. Va.—W. W. Fiala of Virginia Electric, Inc., was elected president of the Electric League of Charleston at a dinner meeting here Dec. 5.

Jess Miller, business agent of the International Brotherhood of Electrical Workers, was named vice president, and C. H. Bruce of Appalachian Electric Power Co. was re-elected secretary-treasurer.

## Thomas and Bradford In New Frigidaire Posts

DAYTON, Ohio—Two additions to the dealer development staff of Frigidaire have been announced by L. C. Truesdell, manager of the dealer development department, to provide close contact with furniture and department stores on a nationwide basis.

A. R. Thomas, one of the new members of the staff, will cover New England and the eastern area. For several years, Mr. Thomas has been assigned to merchandising activities in Frigidaire's New England district.

R. S. Bradford, who has been with Frigidaire for a number of years as a district representative and most recently as sales manager in the Columbus, Ohio, area for the company's Dayton district, will cover the central area of United States.

Continuing in their present capacities in the dealer development department are R. B. Trick and R. E. Krumm. Mr. Trick will contact stores in the western portion of the country, while Mr. Krumm will cover the southern area.

## Barton District Manager For G-E In New York

NEW YORK CITY—T. F. Barton, for the past two years assistant district manager of the New York district of General Electric Co., has been appointed district manager, effective Jan. 1.

Mr. Barton in his new position becomes administrative head of the apparatus sales organization for the states of New York, Connecticut, and northern New Jersey. H. H. Barnes, Jr., for many years commercial vice president of the New York district, will continue in that capacity.





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BOOTH 126

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## New Interior Styling For Refrigerator



Three models in the Westinghouse 1941 refrigerator line are adorned with silhouette portraits of notable early American women. Top model of the line, the 7-cu. ft. Martha Washington model, is shown here. The interior styling of this refrigerator features crystal plastic and the newly styled True-Temp control is illuminated.

## Westinghouse Concentrates on Improvement Of Interiors In 1941 Refrigerator Line

(Concluded from Page 1, Column 5) single-set switch development on electric ranges designed to further the automatic feature of electric cookery; and a new program of informative labeling, designed to provide consumers with the complete facts about Westinghouse products as a basis for intelligent appraisal and comparison before purchasing.

Colonial styling of the Westinghouse 1941 refrigerators is designed to honor a trio of notable early American women. Top model of the line is named for Martha Washington, the first First Lady, and bears her portrait in silhouette. Similar portraits of Dolly Madison and Betsy Ross adorn other models.

Color, introduced in plastic panels of soft pastel shades, makes its first appearance in Westinghouse refrigerator interiors, with colored dishware in harmonizing tones completing the effect. The Martha Washington will have a decor of crystal against the white of the interior, the Dolly Madison one of tan and brown, and the Betsy Ross one of colonial blue. Color theme is continued in the American Standard and American Special models, which have a green and white color motif.

Styling of the new models has been designed to meet the growing emphasis on color which has been

intensified in automobiles, home furnishings, and most of the things the public buys, said T. J. Newcomb, manager of the household refrigerator department.

Probably the most unusual use of color in the new line is in its application to the Tru-Temp control, which Westinghouse again will feature as providing the "five zones of cold." In higher priced models, when the housewife "dials the number" of the temperature she wishes for the main food compartment, the Tru-Temp control lights up with a red glow, if the temperature is higher; if it is lower, the light glows blue.

In operation, the "five zones of cold" temperature-balance arrangement works as follows, it is claimed: If the normal temperature of 40° F. is set for the zone which is devoted to staples and left-overs, relative coldness of the other zones is—fruit and vegetable drawer, 4° warmer; meat compartment, 4° colder; milk and dairy products zone, 1° colder; and ice and frozen foods compartment 22° colder.

During the past 12 years, Mr. Newcomb said, Westinghouse has sponsored 40 basic improvements in refrigerator construction. Among the more important, he said, are Tru-Temp control, one-piece all-steel

"turret top" cabinets, cushion mounting of the complete mechanism, the covered, ventilated Meat Keeper, the glass-topped Humidrawer, and the use of Fiberglas insulation.

Important advance in engineering for the 1941 Westinghouse models, he said, is the elimination of several moving parts in the motor mechanism. This is said to assure even quieter operation than in the past. A more efficient temperature control also has been developed for the ice cube compartment.

A feature of higher priced models designed to do away with one old kitchen annoyance is the Trip-Lok, which automatically shuts the refrigerator door, preventing it from seeming to be closed while still being partially open. On some models, the Aero Spring Hinge has been introduced. This permits the refrigerator door to open to any desired distance, and then remain in that position until the hinge is tripped. Tripping the hinge automatically closes the door from any open position.

The line has been designed to offer a wide variety in model sizes and accessories, as well as color and styling, to meet individual preferences.

Two high-humidity models of 6 and 9-foot capacity contain the Humichest, and are designed to make possible the storage of left-overs and other foods of high water content in uncovered dishes, without loss of moisture. Three models in the line also are available with porcelain exterior.

Other features include the use of Hy-Flex glass shelves in higher priced models, in place of wire shelving; a special plastic panel seal inside the evaporator door to convert some ice cube compartments into a frozen food section; and a dual utility Meat Keeper compartment.

### LAUNDROMAT WASHER HAS AUTOMATIC CYCLE

The Laundromat, Westinghouse's new automatic washer, development of which was reported by the NEWS in its issue of Dec. 18, performs the complete washing cycle—washing, rinsing, and drying—without the necessity of attention once the operation has been started.

Development of the washer is the result of three and one-half years of engineering work by Westinghouse, it is said.

The housewife has only to load the Laundromat with garments, add soap and water softener, and set two dials, it is claimed. From that point on, all operations are automatic. The machine plugs into any electrical outlet, and can be installed anywhere in the home without being anchored to the floor. The unit is said to complete a washing cycle using only one eighth of a kilowatt-hour, at a cost of less than half a cent.

Absence of vibration in the machine is said to be such that a pencil can be balanced on end on top of the cabinet while it is in operation. This feature results from having the moving parts of the inner unit detached from the cabinet, as the engine is from the body of a car.

Exterior cabinet has a sloping front on which is a square door, which opens to form a shelf for clothes. Behind the door is another door of thick glass which looks like a ship's porthole, through which clothes are loaded into the machine. Up to nine pounds of clothes can be handled in one washing operation.

White plastic dials are at right and left of the door—the right dial controlling prewash, and washing operations, and the left dial the water temperature according to the type of fabrics being washed. The machine can be started or stopped at any point in the cycle by pushing in or pulling out the right-hand dial.

A "Water-Mizer" automatically shuts off the water after 10 gallons have entered the machine. Soap and water softener are added through a stainless steel "soap chute" in the glass porthole. The basket, tilted at a 30-degree angle, revolves 52 times a minute, and four vanes lift the clothes to the top of the basket as it turns, from which they tumble to the bottom again, in a figure-eight washing motion.

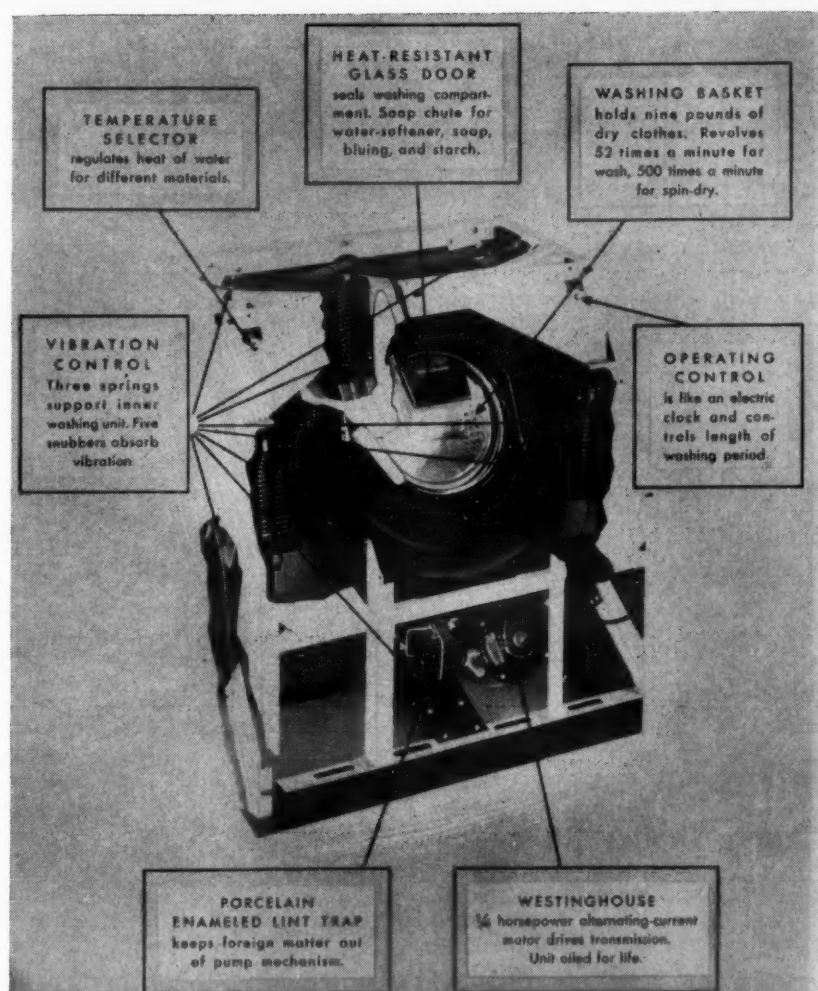
After the clothes are washed, the tub is emptied automatically, and the rinsing cycle started, first with hot and then with lukewarm water. The rinsing continues for eight and one-half minutes. After the next drain, the basket goes into a spin of 500 revolutions a minute, during which the clothes receive their third rinsing, this time with cold water.

## 'Laundromat' Has Own Shelf



The door of the new Westinghouse Laundromat automatic laundry opens downward and becomes a shelf for sorting soiled clothes.

## Westinghouse Automatic Washer



Operating parts of Westinghouse's new automatic cycle washer, the Laundromat, are illustrated. The washing and rinsing operations take place in a basket which carries the clothes through a gentle figure-eight motion. After rinse water is pumped away, the basket goes into a spin of 500 r.p.m. An arrangement of springs and snubbers absorbs the motion of the basket, thereby leaving the cabinet vibration-free.

## Penn Plans Open-House For Jobbers at Show Business 'Date Bureau' Arranged By Alco

GOSHEN, Ind.—Jobbers handling Penn refrigeration controls will be guests of Penn Electric Switch Co. at an "open-house" get-together and dinner on the evening of Jan. 13, first day of the All-Industry Refrigeration and Air Conditioning Exhibition, reports K. W. Cash.

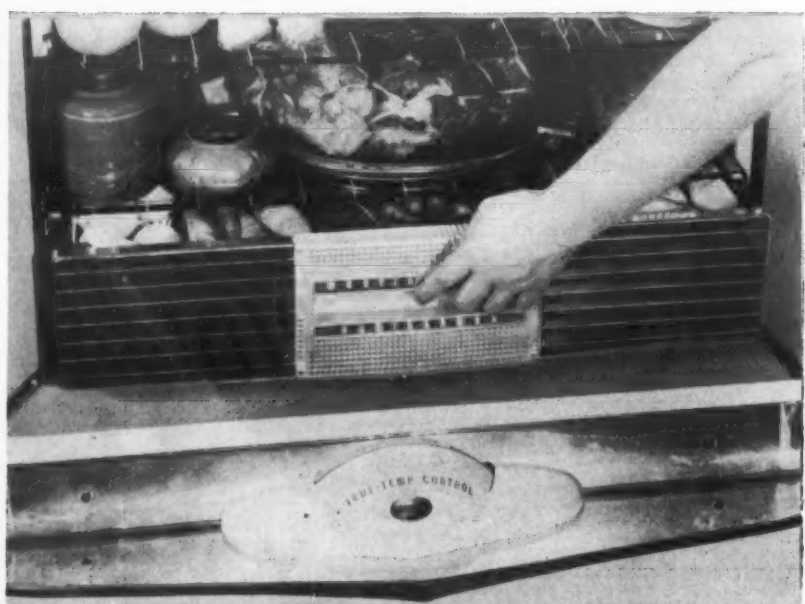
The meeting is scheduled for from 5 to 8 p.m. in Room No. 2 on the third floor of the Stevens hotel. Cocktails and dinner will be followed by a short business session, during which jobbers will preview the educational exhibit prepared by Penn on the use of refrigeration controls.

The exhibit will be available for use in jobbers' territory on a scheduled tour which will be worked out during the meeting. In line with this plan, jobbers are asked to bring to the meeting the list of regularly scheduled R.S.E.S. meetings in their territories, so that the tour may be arranged to coincide with as many of these meetings as possible.

ST. LOUIS—A "date bureau"—but strictly for business purposes—will be maintained by Alco Valve Co. during the All-Industry Refrigeration and Air Conditioning Exhibition in Chicago Jan. 13 to 16, to help Show visitors to get in touch with customers or suppliers they particularly want to see.

Headquarters of the bureau will be set up in room 1324-A of the Stevens hotel during the Show, and attendants will be in charge to assist visitors in finding hard-to-locate persons. Here's how it works: An appointment card is filled out for every person the Show visitor wishes to see, and is dropped in the hotel mail. The "date bureau" handles the rest—making the appointment, and notifying both parties as to the time and place. If either party is forced to cancel or change the appointment, the other person will be notified, on request. Appointment cards may be obtained in advance by writing.

## Two Features of '41 Models



Shown above are the Humidrawer and the new illuminated True-Temp control, features in the 1941 Westinghouse refrigerator line.



## Display Case Firm Concentrates Its Entire Sales Plan on 'Pride of Possession' Theme

**'Sight Selling' Trips and Personalized Plan Drawings Prove Best Methods on Test**



As neat as a dressmaker's pattern is this store layout in which equipment, including the refrigerator fixtures in the rear, was furnished by Royal Store Fixture Co. of Philadelphia. The firm specializes in selling beauty and "pride of possession" to store owners.

PHILADELPHIA—Pride of possession bulks large in selling commercial equipment and store fixtures, says Harold Millstein of Royal Store Fixture Co., manufacturer and retailer of a complete line of display cases and accessories here.

"We have found," Mr. Millstein says, "that even the smallest shop owner wants quality. Our firm is equipped to design and build equipment that is especially designed for the individual storekeeper, and our sales plan makes it possible for any merchant—big or small—to own this equipment."

### FINANCING RULE

About 98% of the equipment sales are arranged on the meter plan, according to Mr. Millstein. However, a minimum down payment of 10% is required on the great majority of sales. The only case where this rule is relaxed is a sale to a customer with established credit.

In contacting prospects, salesmen are thus able to offer equipment on terms to suit the buyer. Guiding their sales effort is one rule—"The buyer must have more than the desire to own the equipment. He must be financially prepared to buy."

The firm formerly had a large sales crew, but found that, in addition to the large selling expense, the majority of prospects contacted could not be sold without the assistance of a sales supervisor. Also, when competition in commercial equipment became very keen, the salesman's commission had to figure in the selling price, even though he did not close the sale.

### CUT SALES CREW

To eliminate this added expense, the firm cut the sales crew to two salaried salesmen and gained a much higher percentage of sales per call. To keep a line on "chance sales," one salesman of the "bird-dog" variety works on a straight commission basis.

Reducing the sales force meant that the remaining salesmen could no longer afford to "baby" a customer. Having the complete information on equipment, services, cost, and terms, these salesmen employ a concentrated selling technique.

First step is to find out what the man wants, what he needs, and what he can pay for. Next, a complete floor plan of his store is drawn up, showing all the equipment he wants, with suggestions from the salesman or designer incorporated.

### DRAWINGS IN SALES PLAN

In some cases detailed drawings—in color—are made up, carrying the legend—"Designed Especially for Blank Meat Market." This detailed drawing, with the personalized touch, is impressive in showing how the equipment will be designed and installed for store owner's particular requirements.

Next step in the selling plan is to take the prospect to several stores where similar equipment has been

installed. These "sight-selling" trips give prospects a chance to see how their equipment will look, and more important, enable the prospect to talk with the equipment users.

Final move is to draw up a detailed proposal for the job, with price quotations. "Because we have eliminated a great deal of the selling expense, and because we fabricate all the equipment we sell, we are able to work on a smaller mark-up," Mr. Millstein stated. "We are set up to offer high quality at reasonable cost."

### MAKE IT ALL

The firm manufactures in its own well equipped factory a full line of display cases, walk-in and reach-in coolers, beer display and storage cases, and will build any piece of equipment to specification. In addition to the full line of commercial refrigeration equipment, the firm also builds shelving, grocery and vegetable storage bins, serving booths for restaurants, counters, and all other storage or merchandising equipment to round out the fixtures needed in a completely equipped store.

This manufacturing set-up enables the firm to offer a prospect a flat price to completely equip his store, and because all equipment is manufactured and installed by the firm, the quality of each item can be kept up to a standard, giving the customer a uniformity throughout his store, while the total selling price can be fixed for an over-all profit.

### 'SPONSORS' SERVICE FIRM

To take care of installation and service on installed equipment, the firm set up an independent service organization. This service firm works independently, and charges the "sponsoring firm" for all work done. The profit on this operation accrues to the service men. This plan was adopted, according to Mr. Millstein, on the theory that men working for themselves would have more initiative, do better work, and would eliminate waste in all departments of the operation.

The installation and service work, of course, is subject to a rigid inspection and approval by the manufacturing and sales organization.

As an aid to selling, the firm now has a large showroom where a complete line of equipment is displayed. Customers are brought to this attractive showroom so that a point-by-point selling story can be given.

In line with cutting the selling expense to a minimum, the firm does not aim a great deal of expensive promotion or advertising pieces to prospects, depending to a great degree on personal contact and walk-in sales resulting from recommendations. As a test case in advertising methods, Mr. Millstein prepared 500 rather elaborate promotion pieces and mailed them to prospects. The return was very unsatisfactory. He then made up some penny postcard pieces—highlighting a special piece

of equipment—and the return was very much higher. This postcard appeal works very well in the sale of used equipment, Mr. Millstein reports.

The firm has recently expanded its operations and now has about 12 dealers in New Jersey, Delaware, and Pennsylvania. The policy is to offer established commercial refrigeration dealers the Royal line of equipment. This equipment, in some cases, is sold as a "name brand," having the dealer's name on it.

## Weber 'Knock-Down' Case Shown To Public

ST. LOUIS—To acquaint St. Louis housewives with the extra care required to provide efficient refrigeration of quick-frozen foods—and also to promote the two lines of products involved—Weber Showcase & Fixture Co., Inc., of Los Angeles and Dewkist Frozen Foods sponsored by Raith Brothers Produce Co. here cooperated in staging a display at the St. Louis Municipal Food Show last month.

Dewkist frozen foods were actually sold from the Weber case in which they were displayed.

The case itself was of the knock-down type, so that it could be opened up to demonstrate to interested show visitors the special cooling methods employed.

This display is believed to constitute one of the first attempts to impress the importance of proper commercial refrigeration upon the consumer rather than upon the retail food merchant.

## Fogel Supplies Variety of Government Needs

PHILADELPHIA — The United States War Department has ordered a large number of 70-cu. ft. all-porcelain reach-in refrigerators from Fogel Refrigerator Co. here for use in army camps throughout the country, the company reports.

These refrigerators comply with all standard Fogel construction specifications which, company officials point out, are almost identical with those set forth by U. S. Government engineers. Shipments of these refrigerators leave the Fogel factory several times weekly at regular intervals.

Other equipment being manufactured by Fogel for government purposes includes refrigerators for the storage of high explosives at arsenals, and special rivet coolers for use in aircraft factories.

The company makes it clear that this government business is being handled by special departments, so as not to interfere with the firm's normal commercial production.

## Martin Heads Tri-State Locker Association

SIoux CITY, Iowa—Carl W. Martin of Garretson, S. D. was elected president of the Tri-State Refrigerated Locker Association at the closing session of that organization's annual convention which was held here recently. Mr. Martin succeeds R. M. Stuepnel of Yankton, S. D.

## Tyler Adds Features To 1941 Lines

NILES, Mich.—A meat display case with improved construction and facilities and a new direct draw beverage cooler are included in the line of refrigeration products being offered for 1941 by Tyler Fixture Corp.

The display case, which is available in "top display" and "double duty" type in 6, 8, 10, and 12-foot lengths, is claimed to have thicker and stronger backs and doors, more insulation, triple adjustment display shelves, and heavy-duty hardware of chrome-plated brass. Fluorescent lights are available if desired.

Other features include welded steel construction, non-glare lighting, wide front glasses, and greater display area.

The "Draw-Kold" beverage cooler, designed to match the company's "Dry-Kold" bottled beverage cooler, also is constructed of heavy gauge, rust resisting, electrically welded steel. It has a burn proof, stain proof "Caf-O-Lite" top with raised front edge which acts as a glass stop.

Cornelius beer taps are used. The cooler also has large, heavy service doors, stainless steel drain board, and a coil for rapid cooling of water.

## Grocery Gets Lockers

LOW MOOR, Iowa—One hundred refrigerated food storage lockers have been installed in the Harold Melendy store here.

# PLAY SAFE FOR 1941...

## Buy Fedders COILS

...for Display Cases, Reach-in Cabinets, Bottle Beverage and other types of coolers

Also Outstanding Adaptability for Forced Convection Hook-ups

BECAUSE...after years of actual service, Fedders All-Copper Coils with Pure Tin finish, perform and Look like New!

FURTHER...assure yourself of deliveries during these emergency times.

There is no mystery about why showcase manufacturers are showing decided preference for Fedders Coils.

### WHY?

● Because they stand up under the most severe operating conditions.

Fedders Coils are 100% surfaced to do the cooling job in hot summer,—not just in winter!

Fedders Coils are absolutely free of all moisture!

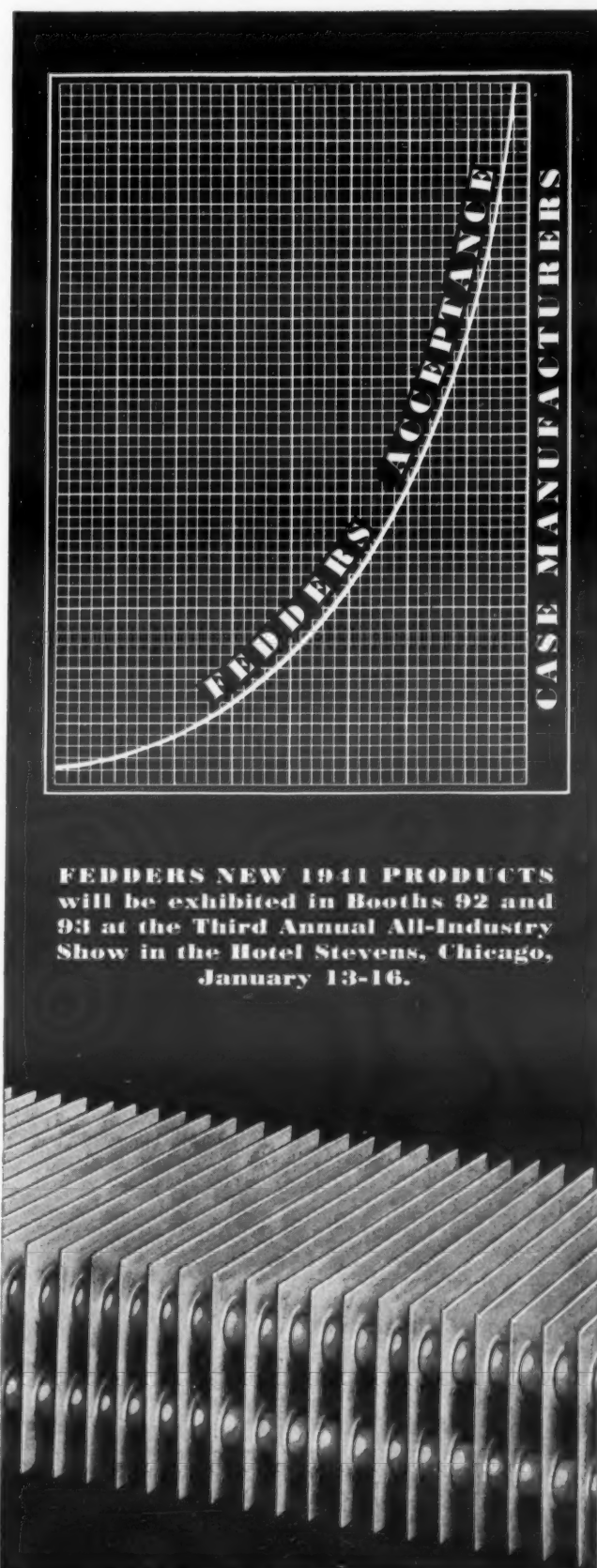
Copper fins and copper tubes provide and maintain heat transfer efficiency...no electro-chemical deterioration!

With all those Fedders features you also enjoy quality performance, immediate deliveries and prices that keep you competitive.

Why not prove these FACTS to your own satisfaction by buying Fedders Coils now. They protect your reputation because of their PERFORMANCE.

**FEDDERS**  
MANUFACTURING CO., INC.  
BUFFALO, N. Y.

Atlanta, Boston, Chicago, Cincinnati, Dallas, Detroit, Los Angeles, New York, Philadelphia, St. Louis, Hamilton, Ont.





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## The Plastic Age Is Coming!

MORE than two decades ago there was a best-seller which had "everybody" talking: "The Plastic Age." It was written by Percy Marks, and had something to do with the wild goings-on of the younger generation.

Wild goings-on have been prevalent in almost every younger generation, it may be suspected. But never before in the world's history has a younger generation had anything to play with like modern plastics.

Here, indeed, is something new under the sun—so new and so marvelous that the present "older generation" seems afraid to touch it.

### THEY'RE STILL MAKING LITTLE THINGS OUT OF PLASTICS

Plastics—the man-made substances which are so far superior in so many respects to the substances found in nature—are still in the miniature stage of usefulness. All we have dared do so far is make small objects of plastics: ash trays, knobs, buttons, toothbrush handles, belts and suspenders, baubles, pans, and playthings.

Refrigerator manufacturers are toying with plastics—gingerly, to be sure, but nevertheless they are showing a certain frightened interest. They are using plastic nameplates, plastic breaker strips, and a few have even gone so far as to introduce plastic door-liners.

### QUESTION: MUST REFRIGERATORS BE MADE OUT OF STEEL?

Why, in heaven's name, must a refrigerator be made of steel, when at least one plastic material (cellulose fiber with resin binder) is 50% lighter, 50% cheaper, 10 times stronger, and superior to steel in everything but tensile strength (which is not a factor of prime importance in refrigerator construction)?

Shipping costs could be lowered immensely if cabinets were fabricated from plastics instead of from steel. Man-hours would be reduced enormously in cabinet manufacture. Breakage and chipping in transit would be eliminated. Plastic surfaces also refuse to be chipped, scratched,

or marred in use—thus increasing customer satisfaction.

Henry Ford is said to be earnestly working on all-plastic automobile bodies. For one thing, increased use of plastics fits in with his idea of solving the farm problem by the increased use of agricultural products in industry. (Plastics are made from vegetable fibers and waste substances.)

### AUTOMOBILE BODIES MADE FROM PLASTICS

Mr. Ford has commissioned a young chemist, Robert Boyer, to turn out a complete plastic Ford body. Already, it is said, Ford cars with undentable, unscratchable plastic fenders are running around the streets of Detroit.

George W. Walker, industrial designer who has done a lot of work for Kelvinator and others in the refrigeration industry, wants to replace the glass in automobiles with clear plastics which can be molded into aerodynamic curves to finish the job of streamlining motor cars.

General Motors is at present exhibiting a transparent Pontiac with fenders, hood, and outer body panels wrought of "plexiglas," a crystal-clear plastic.

### SUGGESTION: REFRIGERATOR DOORS OF TRANSPARENT PLASTIC

Why not a "plexiglas" refrigerator door, to enable the housewife to inventory her refrigerated foods without opening the door and allowing the inrush of heat?

Designers in this industry are earnestly advised to study how plastics can replace more expensive and more complicated materials and combinations of materials in refrigerator design. Such studies should culminate in bold strokes of innovation, rather than timid tinkering.

### RESEARCH MAY SOLVE PRIORITIES PROBLEMS LATER

Incidentally, the supplanting of steel by plastics in refrigerator cabinets would aid our national defense. It appears now that steel production capacities will be overtaxed by defense requirements before another year has passed.

Rapid adoption of plastics in this industry may save it from embarrassing and even paralyzing priorities restrictions.

And, in the process, manufacturers may discover that larger use of plastics might save them money on production costs.

## Guest Editorial

By Alfred P. Sloan, Jr.  
Chairman of General Motors Corp.

THE immediate job before us as we enter upon a new year is the capitalization of the coordinated efforts of industry to the end that in the shortest space of time our defense may be so strong and so effective as to place us in an impregnable position. Nothing should detract from that vital task.

With national defense contracts already reaching the point where they are bringing about increased employment, with larger payrolls, the effect is bound to be a continually increasing stimulation of the economy. While this is particularly true in those areas directly involved, as time passes the influence becomes more and more widespread. The trend of production for industry as a whole during the year 1941 can be expected to reach higher levels and, in all probability,

## They'll Do It Every Time . . . . . By Jimmie Hatlo



establish a new all-time record. I do not see how 1941 can help but be considerably better than 1940, from the standpoint of the volume of production.

The great majority are sure to believe that we have entered an era of real prosperity. But, if we are wise, we will keep constantly in mind that it is partly artificial. Production for defense adds nothing to our standard of living. It is non-reproductive wealth. An economy devoted to that sort of production is not self-supporting. There is sure to come a time when the bill must be paid. No one can escape. The liquidation of the defense material program—and it cannot continue forever—involves grave dangers. It will require the highest order of economic and political leadership to avoid what may well be a real disaster.

An important influence as affecting the economy during the coming year is the taxation factor. Taxes are bound to be greater than ever before. I believe it would be an economic mistake to make taxation so high as to prevent a full utilization of the nation's idle economic resources. To the extent that we utilize such idle resources, the burden of the defense program to the nation as a whole is minimized. Added taxes, specifically levied, might well, in my judgment, be justified as a means of keeping the supply of goods, particularly consumer goods where shortages appear, in balance with purchasing power. Such taxes would minimize the danger of an inflationary spiral of prices. But these should not be put into effect until after we have moved to a six-day working week.

Inflation is probably the worst economic evil. It would prejudice the defense program in many important particulars. It would serve to magnify greatly the difficulties to be encountered when that program must be liquidated. Inflation takes from those who can afford it the least.

In advocating a full utilization of our idle resources, I again repeat: Defense needs must come first. Bottlenecks in production of certain types of products will appear. Some exist at the moment. They should be dealt with on an individual basis as the facts and circumstances develop, through evolution.

The defense material program is well under way. It has passed through the initial contract-awarding stage. We are now in the period of building the essential plants, developing the essential machinery and specific tools, and getting organized to do the allotted jobs, in an expanding way. It must be remembered that industry deals with the realities—men, material, and machinery. The time factor, in many vital particulars, is definitely fixed. As defense plants reach the stage of production, the multiple shift procedure, regularly employed in the automotive industry, should be adopted. And at least a six-day, even a seven-day, operation in the critical cases is essential. Labor should cooperate by waiving the premium for overtime for the period of the emergency. It is inflationary in character and tends to overstimulate the consumer goods industries.

It seems to me there are two objectives to be kept in mind in 1941: The aggressive

prosecution of the defense material program. That comes first. But second, an active discussion and intelligent planning of what is to come after. That is a matter of prime importance. It is essential if we are to minimize what is certain to be a critical situation.

## LETTERS

### WEBER SETS US STRAIGHT

Weber Showcase & Fixture Co., Inc.  
5700 Avalon Blvd., Los Angeles, Calif.  
Dec. 16, 1940

Dear Mr. Taubeneck:

In AIR CONDITIONING & REFRIGERATION NEWS of Nov. 27 there appeared a story on page 8, wherein mention of our company was made. I am referring to the story which is captioned, "Pictures Are Clinchers in Selling Commercial Refrigeration to the Poorer Prospects."

The story refers to the Langston Co. of Dallas, Tex. For your information this company was cancelled as a representative of our organization on Oct. 30 and they were, therefore, misrepresenting themselves when they made the statement that they were representing our company.

In referring to the third paragraph of this story, it states that the pictures are also carried by all salesmen employed by the company which manufactures refrigeration equipment in addition to selling the Weber line. The manufacture of refrigerator equipment by any of our distributors is in direct violation of our franchise agreement with them and it is detrimental to our company to have publicity of this type appear.

DON MACK, Advertising Mgr.

### BEVERAGE COOLER SERVICING

Albert, Tucker Co., W. Va.

Editor:

Being a subscriber to AIR CONDITIONING & REFRIGERATION NEWS I would like to ask if you have any data as to the assembling of the new Kelvinator beverage coolers and how they are taken apart to remove the coils and tank without doing too much tearing down of the cabinet.

FRED HARTMAN

Answer: The following is information on the 1940 Kelvinator beverage coolers as received from the Kelvinator Service Dept.: "Remove the screws from the trim strip by turning up the rubber gasket of the vertical wall of the tank. After trim rail is removed, roll rubber gasket out enough to remove drive pins holding tank to frame. Roll gasket over and out to expose flat retainer strip that holds gasket to the top. "Remove drive pins with a nail puller from this retainer strip. Gasket can then be removed.

"Disconnect suction and liquid line and bend tubing so it will pass through bottom hole, then the tank and coil can be pulled out of the insulation."

### THE PLEASURE IS MUTUAL

Cherokee, Kansas

April 9, 1940

Sirs:

Enclosed you will find \$2. Please send me the Industrial Manual E-1.

I received the SF-1 manual and the News and was very well pleased to be receiving the paper again.

L. E. BOOKOUT



## Westinghouse Convention Attracted Nation-Wide Distributor Turnout



(Left) "Financiers"—at least they know all about the financing of instalment contracts. E. S. Brinsley, vice president of C.I.T. Corp., and G. T. Dunklin, treasurer in charge of instalment finance, Westinghouse

Electric & Mfg. Co. in a get-together at the Westinghouse convention. (Right) Tom Savage, Intermountain Appliance Co., Denver distributor; and C. E. Reid, district merchandising manager in St. Louis.



(Left) From one of the best-known distributorships in the nation's capital. G. F. Kindley, vice president, and Edgar Morris, president, Edgar Morris

Sales Co., Washington, D. C. (Right) Representatives of Times Appliance Co., New York City, included Willard Hall and O. W. Ray.



(Left) W. B. Satterlee and J. H. Wimberly, Jr., Columbian Electrical Co. in Kansas City, Mo., were two Missourians who were really "shown"

some things. (Right) Kempf Brothers, distributor in Utica, N. Y. was represented by L. M. Rayhill, sales manager, and D. R. Kempf, president.



This quartet came from Tennessee to the annual Westinghouse distributors' convention in Mansfield, Ohio, last month. Left to right are E. L.

Fielden, Knoxville, and L. W. Hughes, B. O. Kristoff, and Frank Moore, Jr., of Chattanooga. All represented Southern Furniture Sales Co.



From scattered points (left to right) are R. L. Brown, Wesco, Indianapolis; G. F. Smith, Pennsylvania Electrical Engineering Co., Scranton, Pa.; J. H.

Fisher, Wesco, Philadelphia; J. T. Urban and J. C. Schmidbauer, both of Wesco, Chicago. The distributors got a preview of '41 plans.

## Waterbury Dealers 'Staging' Important In Hotpoint Plans Report Sales Gains, But Have Complaints

By Henry Knowlton, Jr.

WATERBURY, Conn.—Known as the "brass center of the world" because of such industrials as American Brass, Chase Brass & Copper, Anaconda, and Scovill Mfg. Co., this New England industrial community presents an excellent market for the refrigeration industry.

G. Arthur Baril, manager of Domestic Appliance Corp., Norge and Westinghouse dealer, reports a "pretty good year." The lower prices on refrigerators have not affected his dollar volume to any great extent.

### ONLY 3 \$114 SALES

"We have sold only three boxes this year at \$114.50," Mr. Baril asserts, "and the balance have been sold at \$139.50 or better." All selling is done by Mr. Baril, with the aid of one salesman and a girl who "pinch hits" on the floor through the busy season.

Approximately 20% of the deals handled by the company this year have involved trade-ins, and these have been turned over at a profit after they have been reconditioned and refinished in the company's shop.

The company sold commercial refrigeration at one time, but reports that "competition from the power company" (Connecticut Light & Power Co.) has caused it to withdraw from this phase of the refrigeration business. The power company also sells household refrigerators and electric ranges.

### GRIPE AGAINST UTILITY

According to Mr. Baril, the utility will "participate" in wiring charges of \$45 on electric ranges up to 50% (\$22.50) where the deals are located off the utility gas mains. Because of the fact that the utility wants to sell manufactured gas at from \$1.25 to 85 cents per thousand feet in Bridgeport, customers are "discouraged" from purchasing ranges.

The only help given the appliance dealer by the utility, Mr. Baril reports, is in the form of newspaper advertisements on appliances and refrigeration equipment sold by the utility which bear the slogan, "see us or your appliance dealer," and this in type which Mr. Baril says "is so small you can hardly read it."

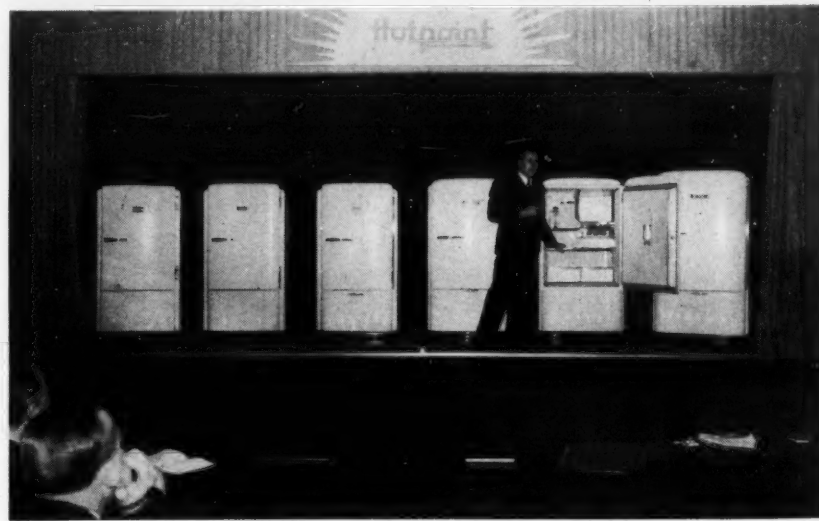
The company has tried two 40-inch newspaper advertisements on the Norge "Xmas Special" at \$118.50, with no appreciable results. Mr. Baril asserts that the best type of newspaper space is classified advertisements offering "Clearance of floor samples at a reduction in price."

Domestic Appliance Corp. moved into an attractive new store in April of this year. The interior finish is "Nu-Wood" panels in random widths and colors, which also serves as an excellent acoustical material. Lighting is by means of fluorescent tubes, which Mr. Baril asserted were "the first in a Waterbury store."

### 'DEFENSE' NO HELP YET

S. George Trainor, owner of S. George Trainor, Inc., G-E dealer of Waterbury, reports that "utility competition is keen and we had the worst November in our four-year history." Mr. Trainor sells some commercial refrigeration, but "not much," and reports that it is hard to get deals away from the power company.

So far, Mr. Trainor has seen no reflection of "national defense" industrial activity in his business.



Hotpoint has gone in heavy for dramatics and visual presentation of its 1941 products. Here F. B. Williams, Hotpoint refrigeration manager, follows his colored slide presentation of 1941 Hotpoint refrigerators with a model-by-model discussion of the line.



W. R. Schaefer, manager, Hotpoint range division, describes the "differently designed" and low cost Hotpoint electric ranges.



R. W. Turnbull, vice president, told distributors, "Now we urge that you take your place in the sun in '41 with Hotpoint."



G. H. Smith, general merchandising manager, summarized the day's presentations to distributors, and presented the new Hotpoint sound motion picture, "And the Pursuit of Happiness."

**GALE**  
COMPRESSORS  
Single and twin cylinder units. Engineered and manufactured to highest standards. Write **GALE PRODUCTS** 1635 Monmouth, Galesburg, Ill.

**KEROTEST**  
Valves and Fittings  
The Standard of the Industry  
Kerotest Manufacturing Co. Pittsburgh, Pa.



Mills Condensing Units  
By Mills Novelty Company  
4100 Fullerton Ave., Chicago, Ill.

For Your Convenience and Profit!

✓ marks the Spot

where you can get  
PROMPT DELIVERY from stocks



**Artic** The Preferred METHYL CHLORIDE for Service Work



E. I. DU PONT DE NEMOURS & COMPANY (INC.) • The R. & H. Chemicals Department • Wilmington, Delaware  
District Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco



# THE MOST UNIQUE STORY IN THE INDUSTRY TODAY!

## For Retailers in Search of Ground Floor Opportunities to make Money with a "Red-Hot" Line!

MAKE NO MISTAKE about it—individual retailers who have enjoyed the Ground Floor Opportunity with Leonard's plans last year have *proved* that they can make big sales and real money.

These are not merely claims. We can give you names, places and figures. The records are plain for you to see in the sensational new Leonard Plan Book for 1941. The list of successful retailers includes appliance stores, furniture houses, automobile accessory stores, jewelers, and others—many of them businesses operating under the same conditions and facing the same problems as your own.

*And all of them are making money with Leonard.*

They have proved that with a fine product, backed by the reputation of a good store, and selling in territory which allows them adequate freedom of action and room to sell, they can achieve real volume and sound profits, no matter what the competitive brand situation may be.

Frankly, Leonard is not interested in a *quantity* of retailers. Leonard prefers *fewer* retailers—but they must be the kind who are ready to go to town. And Leonard will give them the opportunity to do so!

Leonard believes that a good retailer deserves a big and good market, with room to grow in, room to sell in, and room to make profits in.

Leonard believes that a good and aggressive retailer should be free from unnecessary competition in his own line, free from the destructive price cutting which this usually entails, and free to give all his attention to selling Leonard against the only competition he should be called upon to face—that of other makes of refrigerators.

Leonard believes that such a retailer should be protected to the utmost and given all the personal cooperation his high standing de-

mands, without any of the irritating badgering of pressure methods.

\* If you are that kind of retailer, Leonard has a program with plans that have never before been offered in the industry.

And with this comes a product that is altogether outstanding. Without hesitation we say, "From Every Angle There's Nothing Better!" And that goes not only from the buyers' angle but from the retailers' angle too! Leonard for 1941 is tailormade to **SELL!**

**BEAUTIFUL?** You've never seen anything to equal it! There's smooth, flowing, streamlined beauty in every line of the new cabinets. High, full-width doors emphasize height and width and rounded contours.

Then, open the door. Where is the ugly breaker strip with its 80 hard-to-clean screw heads? It's gone—and now the interior is framed in sparkling Stainless Steel—not a screw head to be seen anywhere! The soft light of Leonard's new "Len-a-Light" recessed in the wall back of the Zero Freezer, illuminates the interior of the cabinet *and* the Zero Freezer.

**FEATURES?** They're everywhere! High-speed Stainless Steel freezer with extra-fast

**FROM EVERY ANGLE THERE'S NOTHING BETTER**

**THE OPPORTUNITY LINE FOR '41**

**SEE THIS 1941 LEONARD PLAN BOOK**

Every profit-minded retailer who wants the full story of the remarkable Leonard opportunity in 1941 should see this unusual Plan Book. It tells what other retailers have already accomplished—and describes in detail Leonard's 1941 product, promotion and franchising programs. Ask your Leonard Distributor or Factory Branch about it.



# EVERY MODEL PRICED FOR EASY STEP-UP SELLING!



**MODEL LSS-6**—A big 6¾ cu. ft. prospect-getter! New gray trim to replace old-style breaker strip. Big moonstone glass Chill Tray under Freezer Unit. Two extra-fast freezing shelves, 84 ice cube capacity—9 lbs. 11.8 sq. ft. shelf area. Plus all of the basic 1941 Leonard features listed below. Price is  
only . . . . . **\$114<sup>75</sup>\***



**MODEL LD-6**—A 6¾ cu. ft. equipped model. Has sliding Leonard Crisper with porcelain top. New Stainless Steel door opening trim. Moonstone glass Cold Chest. 2 extra-fast freezing Shelves. 4 Pop-Out ice trays with 64 cubes—8 lbs. capacity. 11.8 sq. ft. shelf area. Plus all basic 1941 Leonard features.  
Only . . . . . **\$124<sup>95</sup>\***



**MODEL LS-6**—Completely equipped 6¾ cu. ft. model. New Stainless Steel door opening trim. 5-Way Presto Shelf. Glass-covered, sliding Crisper. Moonstone glass Meat Chest with glass cover. Vegetable Bin. Sliding half shelf. 4 Pop-Out Ice Trays with 64 cubes—8 lbs. capacity. 11.8 sq. ft. shelf area. 2 extra-fast Freezing shelves. Plus all basic '41 features. Only . . . . . **\$139<sup>95</sup>\***  
In 8¾ cu. ft. size Model LS-8 only . . . **\$179.95\***

## Basic Features in 1941 Leonards

All Steel cabinets—One piece two sides and top, welded construction. Gleaming Permalain exteriors with Porcelain-on-steel interiors. Automatic Len-a-Light lights up Freezer Unit and cabinet interior. Space for Frozen Foods. Stainless Steel, High-Speed Freezer with Porcelain-finished door. Temperature Control with 13 settings and "off". The famous "Glacier" Sealed Unit, unexcelled we believe, by any other unit for its record of service-free performance.

freezing shelves—space for frozen foods—Pop-Out ice trays—sliding glass-covered Meat Chest—extra-large glass-covered Crispers—the new "Presto" 5-Way Shelf that permits easy rearrangement to accommodate all sizes of foods and bottles—big Vegetable Dry-Storage Bin.

And in the new Hi-Humid models Leonard offers a 1941 sensation—the newest and latest development in Humid refrigeration! One set of coils for the freezer—another in the sides, back and bottom of the Food Compartment to provide high humidity. A new all-glass Food Freshener Compartment with glass doors eliminates the need for covering foods and provides for super moist storage of fresh foods and vegetables.

**VALUE?** Yet with all its added advantages Leonard offers greater value than before. Prices are as much as \$30 lower than last year. And the entire price structure is a "natural" for step-up selling.

Only seven models—five 6¾ cu. ft. models and two 8¾ cu. ft. models comprise the complete Leonard Line—providing for all income brackets yet offering an amazingly simple investment problem for you.

Generous backing in cooperative advertising and promotion material of unusual character and a high standard of quality is provided.

Already Leonard is moving fast. May we suggest that if you are genuinely interested in this outstanding opportunity a letter or wire to us at Leonard headquarters is immediately advisable. Sales Department, Leonard Division, Nash-Kelvinator Corp., Detroit, Mich.



## NEW HI-HUMID MODELS

**HI-HUMID MODEL LH-6**—In addition to the coils that freeze ice, there is a separate set of refrigerating coils concealed in the back, side walls and bottom of the food compartment, maintaining correct humidity and temperature throughout. No need to cover dishes and transfer of food odors is reduced to a minimum. The glass enclosed Hi-Humid Food Freshener compartment, with its still, walled-cooled moist air, guards food freshness. Equipped with Moonstone glass Meat Chest. 2 extra-fast Freezing Shelves. 4 Pop-Out type ice trays with 99 cubes—12 lbs. capacity. 12.6 sq. ft. shelf area. Double width Dessert Tray. Vegetable Bin. 6¾ cu. ft. in size. Plus all basic 1941 Leonard features.  
Only . . . . . **\$179<sup>95</sup>\***

**MODEL LH-8**—Provides same features as LH-6 in 8¾ cu. ft. capacity with 4 Ice-popper type trays freezing 107 cubes—12 lbs. of ice.  
Price only . . . . . **\$209<sup>95</sup>\***



**MODEL LR-6**—Complete de luxe equipment. 6¾ cu. ft. size. 99 ice cubes—12 lbs. . . . 50% more than LS-6. Not one but two glass covered sliding Crispers. 5-Way Presto Shelf. New Stainless Steel door opening trim. Vegetable Bin. Moonstone glass Meat Chest with glass cover. 2 extra-fast Freezing Shelves. 4 Pop-Out ice trays. 12.6 sq. ft. shelf area. Double width Dessert Tray. Plus all basic 1941 features. **\$154<sup>95</sup>\***  
Only . . . . .

FROM  
**EVERY ANGLE**  
THERE'S NOTHING BETTER!

\*Prices suggested are for delivery in the kitchen with 5 Year Protection Plan. State and local taxes extra. Prices slightly higher west of the Rockies.

# LEONARD



# 'Please the User' Called the Prime Object of Advances in Air Conditioning Design

## Operators Relate to the Industry's Leading Engineers What They Want and Need in Installations

NEW YORK CITY—The prime object of the air conditioning industry should be to please the people who use air conditioning by working for a constant improvement in design, installation, and maintenance, L. L. Lewis, vice president in charge of engineering for Carrier Corp. and chairman of the conference on operation of air conditioning systems at the annual meeting of the American Society of Refrigerating Engineers, told members in asking for a frank discussion of mechanical and design problems.

First to speak up at the conference was C. W. Walton of Rockefeller Center, who discussed the operation of large comfort systems. Mr. Walton limited his discussion to the broad use of comfort systems in the offices and stores of Rockefeller Center, eliminating mention of the systems in use at the theaters and studios.

Two large central systems serve the offices and stores at the Center, Mr. Walton said. One, a 1,700-ton plant, serves the 47-story International building and the Associated

Press building, and the other, a 2,400-ton plant, serves the stores in the RCA building, and three newer buildings occupied by Time and Life, Eastern Airlines, and U. S. Rubber. In the French building and British building are 300-ton plants.

In these systems, ductwork was installed at the time of installation, Mr. Walton said, but the tendency in later buildings is to install air shafts, so that tenants can be offered offices with or without air conditioning.

"We started with the idea of having a separate system for each building," Mr. Walton said, "but as the demand for air conditioning increased, we decided it was better to have one or two large plants. The present plan is to expand the larger plants to serve the buildings best suited as to location."

### TYPE OF OPERATING CREW

To operate and service the systems at the Center is a mechanical division, composed of engineers and helpers, and supplemented by a shop crew.

"The total number of men working on the systems is never more than 45," Mr. Walton said, "and never less than five, even on a quiet night shift. This number may seem small to operate such a large system, but our fully equipped shop, with a full shop crew, acts as a 'stabilizer.' We can shift this man power and employ special skills in maintaining and operating the air conditioning systems."

In the general operation of the air conditioning systems, all "starting" and "stopping" is done by engineers, Mr. Walton said, with the exception of 150 self-contained room units which are operated by ordinary "button pushers." Air-operated valves make it possible to start all the systems at the same time; however, engineers check back carefully to make sure each system is in operation.

"In spite of the great advances in controls, we still have to depend on human judgment," Mr. Walton said. "Because of variable conditions, and because of the varied demands of tenants, we must employ high-grade operators."

To arrive at the conditions considered to be most acceptable to tenants, a chart of the humidities and temperatures maintained in each group of offices was kept. In most cases, according to Mr. Walton, an average of 71° was maintained.

### HOW TO PLEASE TENANTS

Questioned on the range of comfort desires of tenants, Mr. Walton said that they never satisfied a whole group of people entirely.

"We can only avoid extremes," he said. "In summer we have average room temperature of 75° or 76° F., and probably have never more than a 12° differential."

Asked as to what proportion of fresh air was used in the operation of the systems, Mr. Walton stated that in most cases a minimum of 30% was employed. On the smaller

cooling units, nothing but recirculated air was used, he said. In intermediate seasons, away from the peak load, Mr. Walton said that the supply of fresh air was increased to cut down on the use of refrigeration, reducing the costs of operation without sacrificing comfort conditions.

From the operators' viewpoint, the problem of drafts in a large system was a very knotty one, Mr. Walton said. In most cases, he said, it required a great deal of seasonal adjustment to cut down the velocity when desired.

"Tenants having their first experience with air conditioned offices expect the impossible," Mr. Walton said. "For one thing, they expect to have their working efficiency increased enormously by the use of air conditioning. In these cases, it takes time and adjustment to educate people to the use and benefits of air conditioning."

### CHAIN STORE PROBLEMS

Discussing the problem of chain store air conditioning, H. T. Waechter, W. T. Grant Co., said that the biggest problem was educating store managers on proper store conditions, and training maintenance men to keep the systems in proper working order.

"The average system in our stores has from 50 to 75-ton capacity, having one 50-hp. unit or two 40-hp. units," Mr. Waechter said. "Our problem, in most cases, is to cool the first floor and basement of a store, a manager's office, and women's restroom."

"Some of our stores have all the cooling equipment in the basement, others have only the compressor in the basement, with possibly an evaporative condenser on the roof. We must design for a certain number of people on the first floor, with about two thirds of that number in the basement."

"In planning air conditioning systems for our stores," Mr. Waechter said, "we must first educate our managers. We find that their interest runs far ahead of their information. Our first job is to do this educational job on managers with the basic fundamentals of cooling."

"In most of our stores we train our own maintenance engineers for air conditioning work. These men have numerous other duties in the store, but if they are of normal intelligence we can train them to operate the air conditioning system."

### MAKE IT SIMPLE TO RUN!

"Of course," Mr. Waechter said, "we must have the design and layout of the system so it is not difficult to operate. The controls must be simple to operate. For instance, because we are working with the human element, we must take simple precautions such as having the outside air dampers close automatically. We also must arrange it so the compressor does not run unless the fans are running."

"One big source of grief is some slight trouble with the evaporative condenser. We now provide a high-pressure cut-out with a hand reset, so we can ascertain the source of trouble before throwing the compressors back on the line."

"In the intermediate seasons," Mr. Waechter said, "we have arranged the system so the steam comes on automatically and the outside air supply is decreased."

### LOG IS REQUIRED

"Right at the offset, we get the best possible adjustment of the system by the installing contractor. We require a complete log on the operation of the system for at least a week after it starts up so the 'bugs' will appear and we can correct these faults."

"In operating the system, we train both the manager and the operator to do certain definite things. We have made up a regular form showing exactly what should be done. For example, we list instructions on starting and stopping the system, lubricating bearings, testing for leaks, and data on refrigerant pressure gauges."

By systematizing the operation of the systems by these simple instruction sheets, Mr. Waechter said that a man without a background of refrigeration training could operate the systems used in the Grant stores.

Twice a year the systems are inspected by service engineers, pumping down and starting up the systems, and emergency calls are also taken care of by outside men.

### ASK CUSTOMERS' JUDGMENT

In discussing the conditions maintained in the stores, Mr. Waechter said that the store managers were urged to be guided by the reactions of customers and employees, rather than by their own feelings. The desired conditions vary greatly with the location of the store, he said.

In El Paso, Tex., for instance, a 30° temperature differential had to be figured, maintaining an 80° temperature in the store with an outside temperature of 110° F. on some occasions. In Nashville, Tenn., it was found necessary to greatly reduce the supply of cooled air at the store entrance because store customers would walk out if "struck in the face by a cold air stream."

In the discussion following Mr. Waechter's talk, a representative of another chain store gave his experiences in purchasing and maintaining air conditioning systems. He stated that, based on past experience with faulty systems purchased on a "bid basis," his firm had decided to award contracts without bids, picking a firm which would not sacrifice top performance for price.

He told of one contractor who took an air conditioning job in one store at low bid, more for its "advertising value" than anything else. As a result the installation was faulty, it was difficult to get adjustments, and the equipment manufacturer finally had to be called in to set the job right.

### OUTSIDE SERVICE FAVORED

He then said that his firm had decided to spend an extra amount to make sure they had a completely satisfactory installation, plus the backing of the contracting firm on maintenance and service.

In addition to picking the firm installing the air conditioning on reputation and performance, this chain store (in opposition to the plan outlined by Mr. Waechter) employs a five-year service contract. It was pointed out that by retaining an outside firm of expert refrigeration service men, a saving could be realized.

An example was cited where a service contract, with careful and regular inspection, cost \$500 on a \$20,000 system. With inexperienced operation, it was held, loss of gas in a single year would more than equal the cost of the service contract.

## Buffalo Cooling Up 'Slightly' In 1940

BUFFALO—Ninety-five installations of summer air conditioning, totaling 1,303.61 hp. were made in the Buffalo area during the first nine months of 1940, according to Walter P. Davis, secretary of the Air Conditioning Council of Western New York. Mr. Davis estimates that total business for this year will run "slightly ahead" of 1939.

Up to the present time there have been a total of 335 air conditioning installations made in the area, which require 8,890.66 connected horsepower for their operation.

Winter air conditioning installations made during the first nine months of this year totaled 938 served by 232.88 hp. Total winter air conditioning installations recorded by the New York Council are 5,726 jobs which use 1,463.33 hp.

## G-E Dealers To Sell Room Coolers In N. Y.

By Henry Knowlton

NEW YORK CITY—Room coolers are following the cycle established by household refrigerators and will eventually be sold entirely through dealers is the belief of E. J. O'Brien, sales manager of Blagden Bros., G-E distributor here.

According to Mr. O'Brien, room coolers have already become a "dealer item" in the New York area, and he does not plan to operate a retail sales force on this item next year. The company expects to market about 200 units in this area.

Mr. O'Brien reports that self-contained store cooling units have not been well received in the New York area this year. He estimates that only about 150 units were sold by all distributors and dealers put together.

In the heavy contract end of the Blagden business the company recently completed a \$100,000 installation for American Air Lines.

"We plan to follow the trend of the industry," Mr. O'Brien said. "It is impossible to 'force' the market past a certain point, and we expect to keep our efforts keyed to the natural level of public acceptance."

"We feel that going past that point and trying to force more out of the market than is normally there is a sure way of losing money."

Condensing Units for every commercial refrigeration and air conditioning requirement . . . Also packaged air conditioners.

**CURTIS**  
REFRIGERATION  
AIR CONDITIONING  
AND COMMERCIAL

Established  
1854

Curtis Refrigerating Machine Co.  
Division of Curtis Manufacturing Co.  
1912 Kienlen Ave., St. Louis, Mo.

U. S.  
GOVERNMENT  
Specification

**Filtrine**

Cafeteria Coolers  
Filtrine Mfg. Co., Brooklyn

Ever since the Ansul organization was born a quarter of a century ago, the Ansul idea has been to combine the highest possible product quality with the most expeditious service and the most genuinely friendly customer relations. It is with the feeling that this idea has been largely realized that we say

... **ANSUL**

... for certified quality attested by individual cylinder analysis, for assured working performance, for prompt, understanding service, for a friendly eagerness to match the goodness of our Ansul products with honest helpfulness.

**SULPHUR DIOXIDE**  
**ICE-X**  
**METHYL CHLORIDE**  
Agents for Kinetix's "Freon-12"  
**MARINETTE, WIS.**

Look to

**ANSUL CHEMICAL CO.**

LET THE ANSUL JOBBER NEAR YOU GIVE YOU BETTER SERVICE

**Dayton**  
V-BELTS

Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.

**THE DAYTON RUBBER MFG. CO., DAYTON, OHIO**  
World's Largest Manufacturer of V-Belts

From 1/4 to 25 TONS of refrigeration

Brunner Refrigerating and Air Conditioning equipment comprises air and water cooled condensing units for practically all types of commercial applications up to and including 25 tons of refrigeration... Catalog promptly on request.

**Brunner Manufacturing Co.,**  
Utica, N. Y., U. S. A.

**BRUNNER**

FOR YEARS THE SYMBOL OF QUALITY

**Minute Movies**

SEE BUSH

**RULERS**

**IN COOLERS**

**Bush Mfg. Co.**  
HARTFORD, CONN.  
BRANCH FACTORY  
510 WARDEN RD. CHICAGO, ILL.

**CUSTOMERS**  
Want it...

**DEALERS**  
Wanted!

The market for "packaged" air conditioning is almost unlimited. But no sale is better than the unit you sell! It will pay you to investigate the GR-Lipman line. We have a liberal sales franchise . . . and equipment that is unequalled. Write for details.

**GR-Lipman**  
GENERAL REFRIGERATION DIVISION  
Yates-American Machine Co.  
Dept. AC-7, Beloit, WISCONSIN



# GOING TO THE CHICAGO SHOW?

*Read this open letter to the entire industry before you answer—*

**QUESTION:** Why should I invest time and money visiting the All-Industry Exhibition?

**ANSWER:** As I look forward to the Third Annual Convention, I anticipate it as an opportunity not only to see the parade of new refrigeration products, but to meet the men who make up this great and growing business. The progress of electric refrigeration is unquestionably the result of the progressive thinking of these men who design, build, sell, install, and service the many products contributing to the health, comfort, and financial success of people everywhere.

In effect, the Convention and Exposition is a real life advertisement which will establish the theme for the coming season. The new and improved products which will make their bow in every manufacturer's exhibit will soon be on display in 1941 advertisements . . . in the windows . . . on the counters and shelves of every field outlet and in the installations of thousands of users.

Advertising is the show window for the engineering talent and progress of the industry. You can paint on the wall in letters ten feet high that the products which are backed by consistent advertising are the easiest and most profitable to sell—

BECAUSE of the confidence which is established in the buyers' minds.

BECAUSE advertising builds a quality background both for the manufacturer and for the man on the firing line.

BECAUSE critical buyers know that advertised products must live up to every claim made for them.

BECAUSE advertising creates new and added opportunities for profitable sales.

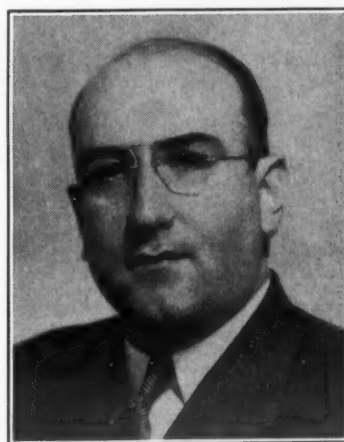
BECAUSE advertising builds volume with consequent increased dollar-for-dollar value.

BECAUSE advertising broadens distribution and assures you of getting what you want when you want it.

When visiting the Convention remember that every improvement in design, construction, and performance is planned to do two jobs—to not only sell TO you but FOR YOU.

*W.D. Keefe*  
Gen. Sales Mgr.

**FEDDERS MANUFACTURING CO.**  
Buffalo New York



*Mr. Keefe states the case well. The established, advertised lines which will be on display at the Chicago Show are designed and promoted to make your business more profitable. If, with the industry, you look forward to a record breaking 1941, you owe it to yourself and your business to see in person this galaxy of new products assembled for your inspection.*

## Join The Preview Parade To The Exhibition!

**3rd Annual Refrigeration & Air Conditioning Exhibition, Chicago, Jan. 13-16, 1941**



## Direct Expansion System Saved the Day For New Orleans' First Ice Carnival

**Rush Job Completed By Equitable Equipment Co.  
In One Week; Over 5 Miles of Tubing Used**

NEW ORLEANS—First cost was reduced, operating costs lowered, and time saved in the construction of a 7,400-sq. ft. ice rink here last summer by installation of what is believed to be the only direct expansion refrigeration system for this purpose in the United States.

A rush job for the express benefit of the city's first ice carnival, the complete installation was made by Equitable Equipment Co., in only a week's time.

To Walter W. Taylor, chief engineer of the Equitable firm, goes credit for suggesting and designing the direct expansion "Freon" system, a radical departure from the orthodox type of brine cooling system which was at first planned for this installation.

Mr. Taylor used only three drawings in planning the ice rink system—a plan view, a cross section of the assembly and a dovetail of the coil and header construction, and an isometric diagram of pipelines and wiring.

The ice carnival was staged in the Municipal Auditorium, and the refrigeration system had to be arranged in such a way that it could be put in and taken out with comparative ease, and so that it would not damage the floor or any other part of the auditorium building.

### FIRST STEP

So the first step in the installation was to lay on the auditorium floor an insulation pad of resin paper, a layer of 1-inch locked roofing Celotex, a layer of 15-pound tarred felt, and finally another layer of locked 1-inch roofing Celotex.

Then, a 9,200-pound galvanized tank the size and shape of the rink was made with approximately 1,000 linear feet of locked and soldered joints. Made in sections and soldered

together at the auditorium, this tank was set on the insulation pad and a 6-inch-high framework was built up around its sides.

For protection to the insulation at all points that were soldered, a 6-inch-wide strip of sheet asbestos was placed centrally along the joints in the sheet metal pan.

### MILES OF COILS

Cooling coils consisted of 29,120 linear feet of 5/8-inch o.d. Type L copper tubing of 20-foot lengths.

This tubing was assembled in a local shop into coil sections consisting of 16 20-foot lengths spaced on 3-inch centers. These sections were of three types—header end, mid-section, and return end.

Coils of each section were held in place on four 1 x 2-inch dressed cypress strips by copper pipe straps and copper roofing nails. One end of the header section had alternate tubes connected to the sub-header by means of 5/8-inch o.d. wrought copper 90° ells, and the adjacent tube ends were connected through 1/4-inch o.d. hard drawn copper tube to the expansion valve ports.

The mid-sections had no fittings on either end. The return end section had 5/8-inch o.d. 3-inch center wrought copper return bends at one end, and the same size couplings at the opposite end.

A total of 90 of these sections, 30 of each type, were assembled in the pan, one of each type being set in place with the mid-section tube end slipped into the coupling of the end sections. This made each finished coil section 16 tubes wide and 60 feet long, spaced on 3-inch centers and with an expansion feed to every other tube.

All refrigerant liquid and suction headers were constructed of Type L hard drawn copper tubing in a local shop.

Walter W. Taylor (second from left), chief engineer of Equitable Equipment Co., New Orleans, and S. F. Myers (extreme right) of Westinghouse, shows two fair members of the cast of New Orleans' first ice carnival the equipment which froze the ice on which they performed. Mr. Taylor planned and supervised the installation. Westinghouse equipment was used.

## Ice Stars Meet An Ice Maker



Coil sub-headers were constructed of 44-inch lengths of 1 1/8-inch o.d. tubing capped at each end and fitted with a 1 1/8-inch o.d. wrought copper tee in the center for connection to the suction branch header.

Holes were drilled in this header, on 6-inch centers, to receive 5/8-inch o.d. wrought copper couplings for connecting to the 5/8-inch tubes in the coil sections. These couplings were soldered in place in the headers with Easy-Flo solder.

### BRANCH HEADERS

Suction branch headers were telescopic, each constructed of wrought copper fittings and designed for connection to 15 coil section sub-headers. A 3 1/8-inch o.d. tee in the center of each branch header connected to the main suction line. From this point the branch header diminished in size in both directions from 2 1/8-inch o.d. to 1 1/8-inch o.d. at the ends with reducing tees on 4-foot centers having 1 1/8-inch o.d. side outlets for connection to the sub-headers.

The liquid header consisted of two sections of 1 1/8-inch o.d. copper tube, with each end capped and the center of each fitted with a 1 1/8-inch o.d. wrought copper tee for connection to the main liquid line. Holes were drilled on 4-foot centers for 5/8-inch o.d. wrought copper couplings for connection to the expansion valves. These couplings were soldered in place.

Refrigerant feed was provided by 30 multi-port thermal expansion valves with 5-foot capillary tube length and 8 1/4-inch tubes and 5/8-inch o.d. tube connections. These valves were mounted horizontally, on one side of the sub-header center line, and each port was connected through 1/4-inch o.d. hard drawn copper tube to alternate coils. All joints between the valve ports and the 1/4-inch tubes were soldered. The control bulb of each valve was placed on the 1 1/8-inch tube connection between the sub-header and suction branch header.

Compressor suction and liquid lines were cross-connected with Type L copper tubing and the crankcase gas space and oil level was equalized with 1 1/8-inch copper tubing. The main liquid line was 1 1/8-inch o.d. copper tube, and the main suction line was 4 1/8-inch o.d. copper tube.

### PLUMBING LINES

Plumbing lines for condensing water consisted of a 3-inch black pipe supply line from the city water service to the condensers, and a 4-inch black pipe line from the condensers to the sewer. A 1-inch city water line was provided for spraying the ice and a 1 1/4-inch drain and washwater line was connected to the bottom of the pan.

Temporary electric service extended from the circuit breaker on the electric panel in the basement to the magnetic across-the-line type compressor motor starters which were located on their shipping containers near the motor end of the condensing units. A snap switch connected in series with the holding coil circuit provided means for manually starting or stopping each unit.

Controls, safety devices, and instruments consisted of one combination high and low pressure cut-out and a pilot-operated automatic water regulating valve on each condensing unit; fusible plugs in each receiver;

thermal overload protection in each motor starter; suction, discharge, and oil pressure gauges on each compressor; a pressure gauge on the coil sub-header of the coil section at one end of the pan, between two end coils in the pan.

The 74-ton refrigerating system consisted of two Westinghouse sealless "Freon-12" condensing units located in the basement. Each unit consisted of a 60-hp., 8 cylinder, hermetically sealed, refrigerant cooled, motor type compressor and a water cooled condenser. Each condensing unit weighed 4,100 pounds and measured 92 1/2 inches long, 26 1/4 inches wide, and 49 1/4 inches high.

### FEW LEAKS

Despite the fact that a total of 3,832 joints in the tubing were made in the shop and 1,173 made during assembly, only 10 minor leaks developed during the pressure tests and none developed later.

Dry oil pipe nitrogen was used in making a pressure test of 250 pounds of the entire tubing system. A 29-inch vacuum was produced.

After two carloads of coarse concrete sand was placed in the pan, the compressors were started and eight 145-pound drums of "Freon" were charged into the system. The sand was sprayed with water and the freezing was begun.

After 28 hours of continued spraying and freezing, ice thickness had been built up to 1/4 of an inch. Twelve hours later, when the first rehearsal was held, the ice was 1/2-inch thick. Little more than six hours after the rehearsal the first performance opened, and the ice stood up perfectly under the strain.

By the time of the following night's performance, the ice had been built up to 1 inch in thickness. Subsequently this thickness was increased to 1 1/2 inches.

To maintain this ice slab, the compressors were operated 24 hours a day. Temperatures of the city water used averaged 80 to 83° F. Water regulating valves were set for 125 pounds head pressure and this was maintained. Suction pressure varied from 14 pounds before skating started to 20 pounds during the heaviest period of general use. The body of ice varied from 12 to 20° F., depending upon the load period.

Installation of the system was started one Sunday at 2 p.m. By 9:45 p.m. Friday the system was being charged with refrigerant. At 2 a.m. on the following Sunday the rink was frozen sufficiently for experimental skating, and at 2 p.m. that same day the first rehearsal for the carnival was held.

## 730 Room Coolers Sold In Detroit During 1940

(Concluded from Page 1, Column 2)  
Room cooler sales also gained sharply during 1940 with approximately 730 sales reported. Of this amount some 300 units were installed by a single manufacturer in a large Detroit office building. This volume compares with 200 room cooler units sold in 1939, and 198 units in 1938. Of the 1938 sales, some 80 units were installed in one office building, but the corrected volume of individual sales for 1940 shows an increase of better than 100% over previous years.

## McCray Makes Factory Personnel Changes

(Concluded from Page 1, Column 1)

all of his business career, has been on the executive committee of the company ever since its formation in 1936 by the late E. E. McCray.

Supervision and management of the McCray factory branches, formerly handled by Mr. Hart, in the future will be under R. J. Rehwinkel, vice president and general sales manager. Harry W. Ziebell and C. H. Ziebell have been appointed assistant sales managers, with the former being manager of factory branches. He will also continue as sales promotion manager. M. A. Drumheller has been named assistant manager of branches, and will continue as sales statistician.

In other executive shifts, A. Paul Gilliland has been elected secretary of the company, to succeed Mr. Hart. He also will be a member of the executive committee, and assistant office manager. W. V. Herr, credit manager, and L. G. Kutz, formerly assistant to Mr. Davis, have been made assistant treasurers. W. L. Herald, for many years associated with the advertising division, has been named assistant sales promotion manager, and Robert L. Carson has been named comptroller and a member of the executive committee.

## Frank Connelly, Norge Distributor, Dies

SEATTLE—Frank B. Connelly, founder and president of F. B. Connelly Co., distributor of Norge products in Washington and Oregon, died here Dec. 6 after a short illness. He was 78 years old.

In addition to heading the appliance distributorship, which has offices here and in Portland, Ore., Mr. Connelly at the time of his death also was president of the Connelly Machinery Co. of Billings and Great Falls, Mont., and of the Connelly Acceptance Co. of Seattle.

Mr. Connelly was born Sept. 5, 1862, in Middleton, Iowa, and went to Montana in 1885, serving as secretary and manager of the Yale-Babcock Hardware Co. in Billings. In 1886 he founded the Connelly Machinery Co.

He was a founder of the city of Billings, of the chamber of commerce there, of the state chamber of commerce, and of Montanans, Inc. He was active in founding the Montana water conservation board.

Active politically, he was a member of the 1908 Republican convention that nominated Taft for the presidency. In 1909 he served as a representative in the Montana legislature, and in 1918 he was elected to the state senate.

Surviving are the widow, Flora E. Connelly, four sons, Kenneth A., Frank G., O. Dean, and Glenn H., and a daughter.

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# Radiant Heating Born In England Before 1914

## T. N. Adlam Stresses Importance of Mean Radiant Temperature in Design

By Henry Knowlton

Because the first radiant heating systems were installed in England within the memory of men now living, any inquiry into the subject should include the opinions and ideas of those who have been close to its development. One of these men is T. Napier Adlam, chief engineer of Sarco, Inc., who divides his time between the company's plant at Bethlehem, Pa., and its offices in New York City.

**Editor's Note:** This is the second of a series of articles on the development of radiant heating. The third article, covering design calculations for a typical system, will appear in an early issue.

It is almost an understatement to say that Mr. Adlam is one of the most ardent and sincere exponents of radiant heating in this country today. Mr. Adlam is impatient with present day theorists who refer to radiant heating as "another method" of heating homes and buildings. After long and intimate experience with the subject, he insists it is "the method of heating."

### THE FIRST SYSTEM

Because it has been nearly 30 years since Mr. Adlam witnessed the fabrication of the first "radiant" heating system, he does not attempt to fix the exact date. Speaking in general terms he states that "it was before the World War, sometime between 1910 and 1914."

It was about this time that Mr. Adlam worked with A. H. Barker in Trowbridge, England. Mr. Barker observed the effects of warm flues going up through the walls of rooms and decided to investigate further, when he found that the warm walls created a sensation of comfort.

Attempting to duplicate the effects of the flue warmed walls, Mr. Barker constructed a moulded plaster wainscot 18 inches high, containing steam pipes. Thus what is now known as "radiant heating" was born.

After the "Wainscot" heating system was in operation, Mr. Barker and Mr. Adlam studied the results and found them quite satisfactory. In Mr. Adlam's words, "the results were good—and the effect on human comfort was equally good."

### JUST AN IDEA

Mr. Adlam points out that at this time nothing was known of body heat loss by radiation, conduction, and evaporation, and no one had given a thought to embedding pipes in concrete or plaster for the purpose of producing "radiant heat." There were no design tables, no field experience, no theory, and no practice—only the glimmering of an idea that appeared to have some merit.

It was soon after this that Mr.

Barker accepted a professorship at the University of London, and also began practice as a consulting engineer in the city of London. Mr. Barker's ideas for a "plaster wainscot heating system" came to the attention of Crittall's (heating contractors and steamfitters). This organization persuaded Mr. Barker to design a system for the Liver Insurance building, then under construction in Liverpool, England.

According to Mr. Adlam, the Liver job was the first "radiant," or wall panel heating system designed and erected, and this was completed prior to 1914. The system employed pipes embedded in the floors and in an 18-inch plaster wainscot around the walls of each room. The British Embassy job, in Washington, D. C., one of the first in America, was done about this time, and followed a similar pattern.

### RESEARCH BEGINS

At about the same time patents issued to Mr. Barker covering his method were assigned to Crittall's, including the American rights, and this firm began to push the idea of radiant heating. According to Mr. Adlam, a great deal of credit is due schools, universities, technical societies, and government research bodies in England, for the development of radiant heating. All took an interest, and aided in the creation of a sound practice.

Following the sale of his patents to Crittall's, Mr. Barker developed the "Rarad," a cast metal panel used to produce radiant heat. The rights to this device were sold to the National Radiator Co. in England and the American Radiator Corp. here in the United States, Mr. Adlam reports.

### MEAN RADIANT TEMPERATURE

After close association with the development of radiant heating over a period of approximately 30 years, Mr. Adlam asserts that the key to designing a satisfactory system is to attain a Mean Radiant Temperature (MRT) necessary for comfort.

Because all surfaces, including the coldest surface in any room, as well as the heated surfaces, radiate or reflect radiant heat, the Mean Radiant Temperature becomes the average surface, or surface radiating temperature in the room.

For example, if all surfaces inside a given room are 50° F. and the floor temperature is raised to 80° F. the temperature of walls and ceiling will begin to rise as heat is radiated from the heated floor. Their temperature will be increased both by radiation, and by conduction, through contact with the warming room air. Thus the major radiating surface, in this case the floor, performs the dual function of regulating both air and Mean Radiant Temperatures.

### COMPLEX PROBLEM

Because the ceiling is not a "black body" which would, theoretically at least, have a 100% factor in absorption of radiations emanating from the floor, radiant heat is both absorbed and reflected by this, and other surfaces. The result presents a complex problem in obtaining the Mean Radiant Temperature, because the various room surfaces re-radiate heat to each other.

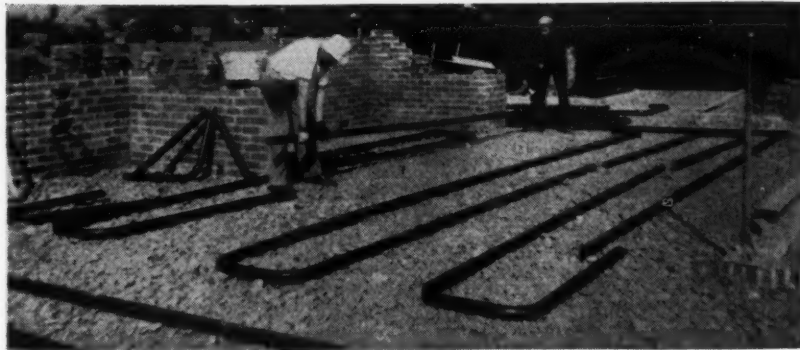
Because the radiating surface raises both the MRT and air temperatures, it becomes apparent that calculations for a radiant heating system may be directed toward either one of two distinct results.

One method calculates the MRT, and uses the resulting air temperature as a check (balanced against normal heat loss calculations) and the other calculates for air temperature and uses the MRT as a check. Both methods are said to have certain merits and typical calculations for a radiant heating installation will be presented later.

### LOW AIR TEMPERATURE

To anyone unfamiliar with the subject, the question of reaching "equilibrium" between air temperature, MRT, and radiating surface temperature, may be difficult to

## Pipe Coils Laid in Residence Floor



Heating in the new home of Prof. Theodore Baird of Amherst College, Amherst, Mass. will be provided by wrought iron pipe coils laid in gravel under the concrete first floor slab. To compensate for heat losses caused by severe winters in this northern climate, Victor Walters, engineer for

understand. It may first appear that if the floor surface of a room is raised to 80° F. the wall and ceiling temperatures, as well as the air temperature, will gradually rise to the same point. If heat continues to flow from the floor to other parts of the room without interruption, it would seem that the room air would gradually rise to the heated surface temperature.

This conclusion fails to give consideration to the normal heat and infiltration losses that occur in all buildings. According to Mr. Adlam, a properly designed radiant heating system "will always maintain an air temperature 3° to 5° F. below the Mean Radiant Temperature. Heat losses on the building are always slightly greater than the conduction rate between the warm floor and room air, thereby holding the air temperature below the MRT. Equilibrium between air and surface temperatures will never be reached in a properly designed system.

Because comfort is more dependent on radiation from the heated surfaces than on the resultant air temperature, Mr. Adlam feels that the MRT is the most important calculation in the design of a radiant heating system.

Westerlin & Campbell, directed the fabrication of 430 feet of 2-inch black pipe to heat the nine-room residence. Mr. Walters collaborated with Frank Lloyd Wright, architect, in the design of the radiant heating system. The picture above shows coils as they were delivered to the job, before welding. Coils were laid level and provision made for draining out water.

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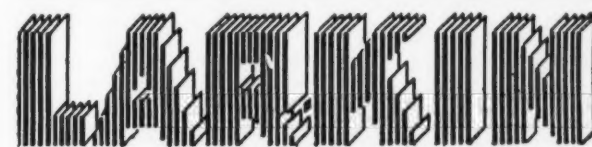
## Cooling Sells Higher Priced Hotel Rooms

COLUMBUS, Ohio—One of the most completely air conditioned small hotels in the middle west is the Hotel Fort Hayes, operated here by the Albert Pick Co. Out of a total of 300 rooms, the hotel boasts 75 equipped with room coolers.

F. E. Myers, assistant manager, reports that all of the higher priced rooms—\$4 and up, are equipped with room units, and that during the summer season these rooms are sold first every night.

"So far," Mr. Myers said, "we have not been able to meet the demand for air conditioned rooms, as they are very popular with the traveling public during the summer. The only answer is more rooms equipped with air conditioning."

All public rooms in the hotel, including the coffee shop, bar, and lobby, are served by a 20-ton Carrier system installed by the Columbus Heating & Ventilating Co. A. P. English, manager of the air conditioning department of this organization, reports that the first part of the system, the bar, was installed six years ago.

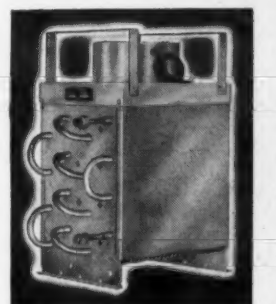


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## Aircon Service To Take S.A.C. Contract Work

NEW YORK CITY—Aircon Service, Inc. has been appointed sole agent to perform all Standard Air Conditioning, Inc. service, installation, and maintenance obligations, reports H. Hersperger, president. Mr. Hersperger formerly was general service manager of Standard Air Conditioning, Inc., which has discontinued its activities in the air conditioning field.

In addition to fulfilling all S.A.C. obligations, Aircon Service is equipped to handle maintenance work for all S.A.C. users, Mr. Hersperger reports. The company has secured S.A.C. stock of parts and supplies.



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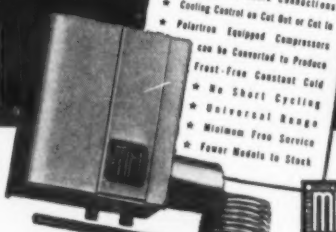
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## Operating and Service Methods For Dry Expansion Counter-Freezers

### General Service Hints on Larger Taylor Freezer Models

By Arch Black and Dean C. Seitz

**Editor's Note:** This is one of a series of articles on the servicing of counter-type ice cream freezers, which have been appearing in the issues of AIR CONDITIONING & REFRIGERATION NEWS in the past few months. It will form one section of a general series on the servicing of low temperature equipment.

compressor to start. If it does not start, check the pressure control setting, the fuses, the high pressure cutout, the motor starting relay, and finally the motor and wiring.

If the pressure does not rise or falls rapidly when the compressor stops insufficient refrigerant is being supplied to the freezer and if this happens the liquid line should be checked starting from the receiver valve, then the dryer (if one is installed), the filter, the expansion valve screen for both dirt and moisture, and finally, the freezer hand valve.

The freezer itself has no small passages and it is very rarely, if at all, that there will be oil binding, therefore it cannot interfere with proper refrigerant flow. Check for closed copper tube lines from frost formation in the flare nut.

Any clogging of the refrigerant line can best be found by slightly loosening one flare nut after the other, starting at the liquid receiver. Partial clogging will be indicated by a cold liquid line. When the liquid line is clear liquid under full head pressure should be found up to the expansion valve.

Refrigerant shortage will often be indicated by an increase above normal in the sound of the liquid passing the expansion valve. Again, it will be shown by too high a suction pressure or too low a head pressure together with a warm liquid line.

The next step is to remove the charge and weigh it. Allow 1 1/2 lbs. of methyl chloride or 2 lbs. of "Freon-12" for each cabinet and 3 lbs. of methyl chloride or 4 lbs. of "Freon-12" for a 2 1/2-gallon freezer. A 5-gallon freezer requires 6 lbs. of methyl chloride or 8 lbs. of "Freon-12."

All freezer ratings are based on mix at 40° F. Allow 1 minute extra freezing time for each 10° F. above this temperature when freezing warmer mix.

### 2. CABINET TEMPERATURE TOO COLD OR TOO WARM

In a temperature controlled system a cold cabinet can be caused only by an improper setting of the temperature control. With pressure control the control or the expansion valve may be set incorrectly or the expansion valve may be stuck partly open. If the valve is at fault, excessive frost will form on suction line.

A warm cabinet with the machine shut off indicates an improperly adjusted control switch, an expansion valve stuck closed or partly closed, but may be caused by excessive head pressure operating the high pressure cutout.

If the compressor is shut down with a warm cabinet in a pressure control system then check as indicated for a clogged liquid line or expansion valve, etc., as outlined under the complaint, "Mix Freezes Slowly or Will Not Freeze." Likewise, if the cabinet is warm and the compressor is operating, check for lack of refrigerant.

## Service Suggestions On Taylor Freezers

### SCRAPER BLADES

An outline has been given in previous articles regarding the method of sharpening scraper blades, as they do require occasional sharpening. However, the blades on the 1937 5-gallon Taylor freezer will not require to be sharpened. On older freezers and on the 2 1/2-gallon Taylor the blades may, when necessary, be removed from the frame and filed sharp.

Obtain the 22° angle on the inside of the blade and file to a sharp edge. Then file a short 22° angle on the outside of the blade to form a wedge shaped edge. It is well to copy the shape and angle of a new blade. Later there will be an illustration of the Taylor Auto-Sharp blade and beater and an explanation will be given as to how these are to be removed.

### DRAW-OFF GATE

With wear or abuse the draw-off gate may leak. Gate, however, can be pulled from the freezer and lapped flat. If this does not cure the leakage, remove the two draw-off gate studs and lap the surface against which the gate seals.

### 2 1/2-GALLON TAYLOR FREEZER

To remove the front plate, loosen the two screws on each side of this front plate and remove the screw in the center of the plate. To remove the hood, remove the valve knob, the switch, and the two screws at the rear of the hood near the top sheet. The hood must be sprung slightly to remove it over the hand valve.

To service the freezer hand valve remove the hood as explained and the valve sealing bellows may be replaced under pressure with the valve in the full open position. Remove the cap from the end of the valve and exchange the bellows unit. To remove the valve, the system should be pumped down and the two 1/2-inch flare nuts at the valve removed. Pump down the system carefully to avoid entrance of air or moisture into the freezer or freezer connections.

### 5-GALLON TAYLOR FREEZER

Three round head screws on the back plate should be removed to take off the plate. The motor may be oiled or serviced when necessary through the back plate opening. To remove the hood, take off the back plate and the switch knob, then slide the hood back 1/2 of an inch and lift it off.

The freezer chain drive operates in the aluminum case housing between the motor and the freezer. This drive operates in oil on roller bearings and should require little service. Inspection of the drive is possible by removing the upper half of the case enclosure. Oil level is indicated by the level plug under the freezer near the hand valve.

The roller bearings of the counter shaft are mounted in eccentric bushings. These bushings can be rotated to remove slack from the chains. Both bushings must be rotated to the same position to maintain a parallel counter shaft.

## Some General Service Complaints

### 1. MIX FREEZES SLOWLY OR WILL NOT FREEZE

In every case this indicates a shortage of refrigerant at the freezer. When the freezer hand valve is opened suction pressure rises approximately 4 lbs. or more for the

## New 'Air Flow' and Lighting Is Featured By Puffer-Hubbard

GRAND HAVEN, Mich.—Two lines of refrigerated display cases, one featuring controlled air flow and fluorescent lighting, and a line of dry storage bottled beverage coolers has been announced for 1941 by Puffer-Hubbard Mfg. Co. here.

The standard display cases have enlarged, all-copper, double-tin coated, self-defrosting coils of the moist type, with extra drier tubes built into the coils. Upper baffle is of fully insulated porcelain with an auxiliary anti-drip feature.

Other features of the standard line include "Thermopane" metal-sealed and triple-thick glass on the front of the case; extra storage door for added convenience in loading and unloading; sliding, roller bearing "Loxit-A" service doors with triple-thick glass set in shock-proof rubber; full length bead across top of case to prevent packages from sliding off; and heavy-duty, snap-action hardware.

The company's other line of display cases has all of these same features, and in addition boasts what is known as the "patented Grad-U-Matic air conditioning system."

This arrangement consists primarily of a slide regulator by means of which the rate of air change in the case can be controlled from 1 1/2 to 3 1/2 times per minute. The adjustment can be made by the merchant himself, to compensate for climatic conditions or service loads.

Each Grad-U-Matic case is equipped with a special coil with large fin area permitting ample collection of moisture and consequent maintenance of high relative humidity. Air is drawn from the extreme top of the case and is carried downward by the multi-vane blower and exhausted into the full length air conditioning coil chamber. The air is then released evenly the full length of the case.

Models in both the standard and Grad-U-Matic lines are the same, in size, outward appearance, and name. All units are porcelain finished both inside and out.

The Puffer-Hubbard dry-storage bottled beverage cooler is offered in five sizes varying from 50 inches to 12 feet. Cooling can be set from 32° to 40° F. as desired. A water cooling system with a capacity of approximately 2 gallons per hour can be installed in all models.

Exterior finish of these units is porcelain. The new type slide-away doors of stainless steel slide up under the counter, keeping them out of the way and providing access to all parts of the case at once, if desired.

## Buffalo Service Men To Elect Officers

BUFFALO—Annual election of officers of the Niagara Frontier chapter of Refrigeration Service Engineers Society will be held here Jan. 8. The new officers will be installed at the chapter's annual banquet on Jan. 22. Fred Cameron is banquet chairman.

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## Four Models In 1941 Westinghouse Room Conditioner Line

(Concluded from Page 1, Column 3)  
normal operation the conditioner extracts heat from the air in the room and discharges it outdoors. By reversing its operation, it extracts heat from the outdoors and discharges it into the room.

Designed to fit into an ordinary window, the 1941 Westinghouse Mobilair has a capacity of 6,000 B.t.u. per hour and a heating capacity of 7,500 B.t.u. per hour, and up, depending on the outside temperature.

The amount of fresh air taken into the room is varied by means of a dial control, up to 60 c.f.m. The same dial is used to expel stale air, smoke, and odors.

Mr. Danley believes that the new room cooler will be particularly useful in the "in-between" seasons of spring and autumn, when it is too chilly for comfort but not cold enough to start the central heating plant. In mild climates it can be used for both cooling and heating the year around.

The 1941 Westinghouse room cooler line includes three other models which do not incorporate the heating feature. A smaller window unit has a capacity of 4,000 B.t.u. per hour—one-third of a ton. A second window model has a capacity of 1/2 ton, and a console model, with a capacity of 9,000 B.t.u.—3/4 ton—is built for large executive offices and homes.

Cooling mechanisms in the new Westinghouse air conditioners are all hermetically sealed and carry a five-year warranty.

## Warm or Cool—As You Like It



This child's bedroom is kept cool in summer and warm in winter with the new Westinghouse Mobilair room cooler which utilizes the principle of reverse cycle heating in winter and direct expansion cooling in summer. Three models which do not have the heating feature complete the line.

## Boston Cooling Sales Lose Ground At Year's End—Dealer Mortality High

BOSTON—Air conditioning sales reported for the first seven months of this year totaled approximately 900 connected horsepower—an increase of 40% over a similar period of last year, according to Daniel Ricker of the Boston Edison Co. The number of jobs increased 80% during the same period with 83 installations reported.

Lack of heavy tonnage installations made during the balance of the year will make the final total run well behind 1939, Mr. Ricker estimates. Several very large contracts were awarded during the closing months of 1939, but no similar sales have been made during the last months of 1940.

The current year has seen a shrinking in the number of concerns actively engaged in the sale of commercial air conditioning in the

Boston area. Lawton Engineering Co., former G-E distributor, is no longer in business. Air Conditioning, Inc., Gar Wood distributor, formerly handling Westinghouse, has given up the sale of summer cooling systems.

General Heat & Appliance Corp., former Delco-Frigidaire distributor, now handles the Delco-Heat line exclusively and is not engaged in summer air conditioning work. The local branch of Standard Air Conditioning Co., headed by Harry Troutwine, ceased business when the national organization stopped operating a short time ago.

On the other side of the ledger, the Frank C. Robinson Co. of Watertown, Mass., has taken on the G-E line of summer air conditioning and commercial refrigeration in the Boston area.

MAN 44 years old, married, with seven years experience as dealer and ten years as division manager with large appliance manufacturer, desires new connection. Experienced in household appliances, commercial refrigeration and air conditioning. Write proposition to Box 1290, Air Conditioning & Refrigeration News.

### FRANCHISES AVAILABLE

ROYAL'S QUALITY all porcelain cases insulated with four (4) inch sheet cork and complete food store fixtures line are now available to reliable distributors. Streamlined beauty and guaranteed quality. Exclusive features for profitable sales. Backed by over a quarter of a century experience. Write for distributorship details. ROYAL STORE FIXTURE COMPANY, 847 North Broad Street, Philadelphia, Pa.

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

### EQUIPMENT WANTED

PURCHASERS and Liquidators of Surplus Refrigeration and Air Conditioning Equipment of any description such as Compressors and Motors, Units of any size, Coils, Unit Coolers, Expansion Valves, Water Valves, Controls (all types), Beer Equipment and accessories. Please send full particulars or sample. R & R REFRIGERATION EQUIPMENT CO., 508 Morris Avenue, Bronx, N. Y.

### EQUIPMENT FOR SALE

A CLOSE OUT of air conditioning cabinets less refrigeration equipment. Three sizes. Sizes to be mailed on request. Each cabinet is new and crated. Small size suitable for 1/2 h.p. installation, price \$11.00. Medium size was made for use with 3/4 h.p. installation, \$16.00. Large size for 1 1/2 h.p., \$21.00. Each Cabinet contains the following: a Westinghouse motor and 16" fan also a filter. Larger cabinets also have a set of casters and an Ionizer. Above cabinets can be used for remote air conditioning installations. All prices F.O.B., Cleveland, Ohio. Box 1289, Air Conditioning & Refrigeration News.

BRAND NEW Westinghouse 1 to 2 ton Low-Sides available, complete with Walnut, Mahogany or Modern cabinets, filter, coils, fans, valves, etc. Simple to install, satisfactory in operation. Sold to you in original Westinghouse crates—\$32.50 each. Also brand new 1/2 H.P. and 1 H.P. complete G-E units and full line "As Is" or Rebuilt Commercial units from 1/4 H.P. to 3 H.P. "As is" 1/4 H.P. units complete with motors as low as \$5.00. Write ASSOCIATED REFRIGERATOR PLANT, INC., 3028 West Hunting Park Avenue, Philadelphia, Pa.

28 TON Brunswick 4 cylinder Ammonia Compressor, 40 H.P. Wagner motor and accessories; 1—Burgess Iron Removal Plant with tank, brim and back washing equipment; both excellent condition. FREDERICK G. SMITH & CO., 327 E. Stephenson St., Freeport, Ill.

## CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

### POSITIONS AVAILABLE

ONE OF the largest refrigeration manufacturers has opportunity for man experienced in wholesale commercial refrigeration sales, contacting dealers in Illinois and adjacent western area. Preferably about 30 to 35 years old, single, living in territory and free to travel. Moderate salary to start, with excellent future opportunity. Write Box 1284, Refrigeration News, stating full details. Replies held strictly confidential. Our own organization knows about this advertisement.

DISTRICT SALES Manager in Chicago area for complete line of Patented Frosted Food Display equipment. Well known name with established acceptance. Selling thru distributors. Opportunity for large earnings in this fast developing industry. Booth at All-Industry Exhibition. Write giving full particulars. Box 1288, Air Conditioning & Refrigeration News.

WANTED—Ambitious and Energetic Junior Engineer with 1 or 2 years practical experience for Laboratory testing and research work on both household and commercial refrigeration Condensing Units. Write to Mr. O. H. Buschmann, Chief Engineer, COPELAND REFRIGERATION CORPORATION, Sidney, Ohio, stating age, education, experience, salary expected, references, etc.

### SALES SUPERVISOR WANTED

SALES SUPERVISOR for Western Pennsylvania and New York State experienced in sale of refrigerator display cases, coolers, reach-in boxes, compressors, etc., by large, nationally known, long established manufacturer. Must have ability to locate, set up and train salesmen and dealers. Liberal straight salary and expense arrangement. Write stating complete details of experience and sales volume during past few years. Box 1287, Air Conditioning & Refrigeration News.

### POSITIONS WANTED

EXPERIENCED commercial refrigeration, air conditioning, and heating sales engineer and sales manager. Qualified promotional sales merchandiser as well as capable of handling any sales organization. 12 years experience—desire connection with well rated concern. Free to travel. Permanent connection desired. Open for position any time after January first. Answer Box 1279, Air Conditioning & Refrigeration News.

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Air Conditioning Exhibition

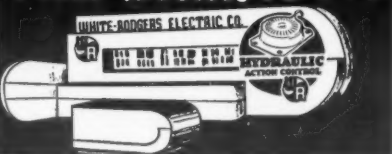
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Jan. 13-16, 1941

See Air-Maze at R.E.M.A.  
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### AIR-MAZE

Permanent Air-Filter Panels  
AIR-MAZE CORP., CLEVELAND, OHIO

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FOR ALL TYPES OF  
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WRITE TO

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CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

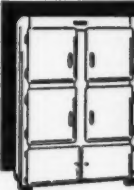
CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

HERMETIC REBUILDING and Exchange

Service General Electric—Westinghouse—Majestic and Grunow Units, Compressors and parts. Immediate shipment. Old unit can be returned later in our crate. We also exchange floats, Evaporators, Controls. Write for price list specify S6. SERVICE PARTS CO., 1101-03 N. 24th Ave., Melrose Park, Ill.

### PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



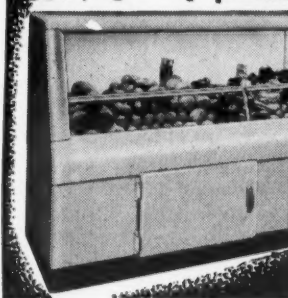
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3 Chicago Branches, North, West, South

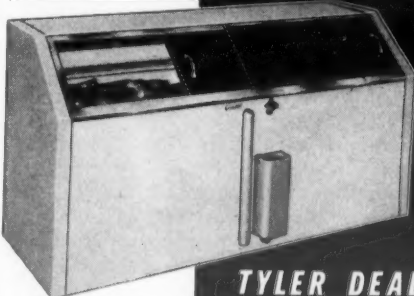
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PERFECT REFRIGERATION ENDS  
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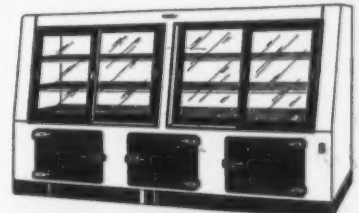
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